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OPTIMAL RECRUITING STRATEGY TO MINIMIZE U.S. NAVY DELAYED ENTRY PROGRAM (DEP) ATTRITION

by

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13. ABSTRACT *(maximum 200 words)*

This thesis develops an optimization based model to assist the Navy Recruiting Command in placing Nuclear Power Field recruits in the Delayed Entry Program (DEP). After signing enlistment contracts, individuals are enrolled in the DEP prior to entering recruit training. During DEP, some individuals may renege on their contracts, thus becoming DEP losses. Although DEP is costly, it is a necessary and important inventory management tool since it provides a pool of recruits to meet future accession goals.

The DEP placement problem is formulated as a nonlinear program that minimizes relative recruiting costs weighted with respect to the desired recruit category. The lowest recruiting costs are assigned to recruits in DEP lengths that ensure the lowest probability of becoming a DEP loss. Increased costs are assigned to direct shippers. A large penalty cost is assigned to monthly accession deficits. Integral to the model are estimates of DEP loss probability for the various combinations of recruit categories and DEP lengths.

This research concludes that the annual new contract objective (NCO) does not support the successful attainment of the accession goal. Furthermore, an NCO increase of 20% is required to achieve the accession goal with a 95% confidence level. Finally, the thesis addresses the accession goal confidence levels associated with incremental increases of the NCO.

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OPTIMAL RECRUITING STRATEGY TO MINIMIZE U.S. NAVY DELAYED ENTRY PROGRAM (DEP) ATTRITION

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This thesis develops an optimization based model to assist the Navy Recruiting Command in placing Nuclear Power Field recruits in the Delayed Entry Program (DEP). After signing enlistment contracts, individuals are enrolled in the DEP prior to entering recruit training. During DEP, some individuals may renege on their contracts, thus becoming DEP losses. Although DEP is costly, it is a necessary and important inventory management tool since it provides a pool of recruits to meet future accession goals.

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EXECUTIVE SUMMARY

This thesis develops an optimization based model to assist the Navy Recruiting Command (NRC) in placing Nuclear Power Field recruits in the Delayed Entry Program (DEP). After signing enlistment contracts, individuals are enrolled in the DEP prior to entering recruit training. During DEP, some individuals may renege on their contracts, thus becoming DEP losses. Although DEP is costly, it is a necessary and important inventory management tool since it provides a pool of recruits to meet future accession goals.

The DEP placement problem is formulated as a nonlinear program that minimizes overall recruiting costs. Recruiting costs are reduced by assigning recruits to DEP lengths that ensure the lowest probability of becoming a DEP loss. Integral to the model are estimates of DEP loss probability for the various combinations of recruit categories and DEP lengths.

The goal of developing a DEP placement strategy is to minimize the total cost of achieving the annual recruiting goal by reducing the number of DEP losses. By placing contracts into DEP lengths with the lowest probability of DEP loss, overall recruiting costs may be lowered due to fewer DEP losses. To be implementable, the placement strategy must span the typical NRC planning horizon of one fiscal year, or 12 months. However, the model is implemented with a 24 month planning horizon because many High School (HS) recruits sign contracts in one fiscal year but access during the following fiscal year. By extending the planning horizon, the model must consider the effects of the placement strategy on the outlying year. For example, a recruit signing a contract with a 9 month DEP length in June 96 will not access until March 97. Thus, the attainment of the March 97 accession goal must be considered.

The DEP placement model developed in this thesis requires four kinds of data: DEP loss probabilities, the annual new contract objective (NCO), the monthly accession goals, and the DEP pool levels. All data for this thesis are for FY96 Nuclear Field recruits. This research concludes that the annual new contract objective (NCO) does not support the successful attainment of the accession goal. During FY96, NRC did not

attain the Nuclear Power Field accession goal in April and May. The accession shortfall placed additional burden on the recruiting force to ensure that the annual accession goal was achieved. Furthermore, an NCO increase of 20% is required to achieve the accession goal with a 95% confidence level. Finally, the thesis addresses the accession goal confidence levels associated with incremental increases of the NCO.

I. INTRODUCTION

Military recruiting is the cornerstone of maintaining a strong and healthy defense organization. The Navy Recruiting Command (NRC) is responsible for recruiting civilians into the naval service. Its recruiters are salesmen who sell the Navy to American youths between the ages of 17 and 21.

The task of finding highly qualified candidates is both time consuming and labor intensive. The recruiters begin the enlistment process by contacting potential candidates through high school visits, job fairs, and telephone interviews. After satisfactory completion of the necessary aptitude tests, interested candidates sign enlistment contracts and are scheduled to enter recruit training at some future date, typically no longer than one year from the date of the contract. While waiting to enter recruit training, they are enrolled in the *Delayed Entry Program (DEP)*. Some recruits decide not to join the Navy and renege on their contracts. Others become disqualified due to injury or improper conduct. The attrition from the program is referred to as *DEP loss*.

Every recruit is a financial investment. The Navy expends valuable resources administering medical and aptitude exams. Also, the time spent in recruiting applicants has its associated costs. NRC estimates that approximately 20% of the DEP population will fail to honor their enlistment contract [Bohn and Schmitz, 1995]. With the FY1996 goal of 56,479 new contracts, NRC expected 11,296 DEP losses throughout the year. NRC experienced 9,946 DEP losses. Using a conservative estimate of $3000 per recruit, this translates to $29.8 million that the Navy spent on DEP losses alone. In an era of declining budgets, it becomes increasingly important that NRC develops strategies to reduce its DEP attrition.

Alternatives exist to reduce the number of DEP attritions. First, the Navy could exercise its legal right and force recruits to honor their enlistment contract since the contract is a binding legal document. The Navy, as well as the other services, does not exercise this option because they fear the negative atmosphere created by legal proceedings will drive away more potential recruits than it will keep from reneging. Instead, NRC incorporates DEP losses into its annual recruiting strategy. Accurate DEP

loss management allows NRC to lower overall recruiting costs by reducing the number of contracts which must be signed during the year. If recruits are placed into DEP in a manner which decreases the likelihood of becoming a DEP loss, fewer contracts will be required to achieve the monthly accession goals. To illustrate, a recruit can be viewed as a commodity that is perishable with time. The longer recruits remain in DEP, the more likely they will become DEP losses. This suggests that recruits should enter recruit training soon after signing the enlistment contracts. However, this is not always practical for several reasons. First, recruits who sign contracts during their senior year of high school must complete their education and cannot enter training immediately. Second, the space for recruit training is limited. Thus, when there is no available space, recruits must wait until space becomes available. Third, NRC generally requires a minimum of one month to perform security and background checks on each recruit. Finally, by building a healthy DEP inventory, NRC is better prepared for unforeseen shortages in the future.

For the U.S. Navy, recruits are grouped into three categories: General Detail (GenDet), Advanced Technical Field (A-school) and Nuclear Power Field (NF). NF is the most selective of the three categories. The criteria for NF recruits are generally more rigorous and the pool for potential NF recruits is generally smaller than the other categories. Having higher qualifications, NF recruits are also in demand in the private sector and other non-military public institutions. Thus, it has become increasingly difficult to recruit for the Nuclear Power Field. In FY1996, NRC failed to achieve its NF accession goals for April and May. This event helped stimulate the focus in this thesis on NF recruits.

To analyze recruit behavior, recruiting data for all NF recruits from FY1991 to FY1994 were obtained from Navy Personnel Records Data Center via NRC. At the writing of this thesis, the data for FY1995 and FY1996 were unavailable. It is important to note that FY1994 was the first year that NRC accessed female NF recruits. Since no prior data exists for female NF recruits, 101 female records were discarded. All DEP loss analysis was conducted assuming a gender neutral approach using male NF recruit data.

A. THESIS OBJECTIVE

To better manage NRC's DEP attrition, this thesis develops an optimization–based tool for placing recruits in the DEP. In particular, the tool can be used to determine an optimal number of recruits to be placed in DEPs of various lengths. The main goal is to reduce recruiting cost.

B. THESIS ORGANIZATION

Chapter II introduces the recruiting process within the Navy Recruiting Command, including the Delayed Entry Program and measures of recruiting performance. Chapter III details the DEP placement optimization model. Chapter IV discusses the implementation and results of the optimization model. Chapter V summarizes the results of this thesis and presents recommendations for further study.

II. THE NAVY RECRUITING PROCESS

The sections below provide information concerning the recruiting process at the Navy Recruiting Command. Section A introduces the NRC organization. Section B details the recruiting process. The Delayed Entry Program is discussed in Section C. Finally, Sections D and E explain the terms accession goals and new contract objective. Section F provides background on previous research on DEP loss and DEP placement.

A.   NAVY RECRUITING COMMAND

At the highest level of the Navy recruiting organization is the NRC Headquarters (HQ), located in Arlington, VA (see Figure 1). Under the direction of the Commander, Navy Recruiting Command (CNRC), the HQ coordinates and supports the U.S. Navy's recruiting effort.

```
Headquarters (HQ)
        ↓
     4 Areas
        ↓
     31 NRDs
        ↓
      Zones
        ↓
     Stations
        ↓
     Recruiters
```
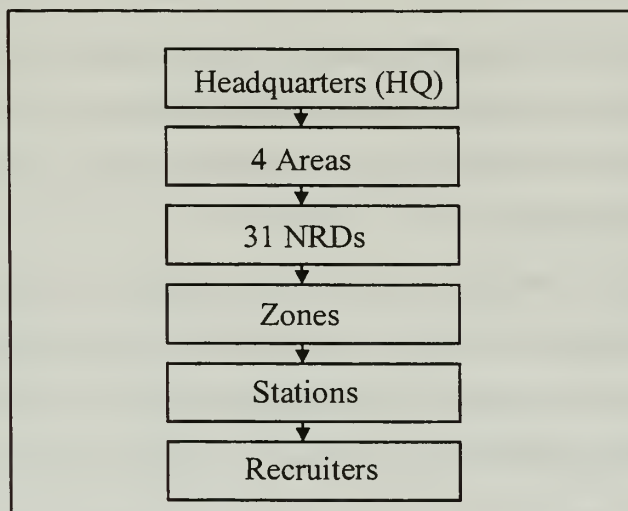
Figure 1. Navy Recruiting Command Organization

In addition to the highly visible enlisted recruiting effort, HQ is responsible for recruiting officer candidates for programs such as Aviation, Intelligence, Medical, and Nuclear Power. The next level in the organization consists of four Area commands. Each Area is responsible for supporting a separate geographical region of the United States which consists of 10-14 states. Table 1 lists the locations of the four area offices and the subordinate NRDs.

Areas	Office Location	NRDs		
1	Scotia, NY	New England	Buffalo, NY	New York, NY
		Columbus, OH	Philadelphia, PA	Pittsburgh, PA
		Michigan		
3	Macon, GA	Montgomery, AL	Jacksonville, FL	Atlanta, GA
		Nashville, TN	Raleigh, NC	Richmond, VA
		New Orleans, LA	Miami, FL	
5	Great Lakes, IL	Chicago, IL	Kansas City, MO	Minneapolis, MN
		Omaha, NE	Dallas, TX	Houston, TX
		Indianapolis, IN	St. Louis, MO	
8	Oakland, CA	Denver, CO	Albuquerque, NM	Los Angeles, CA
		Portland, OR	San Francisco, CA	Seattle, WA
		San Diego, CA	San Antonio, TX	

Table 1. Area Command Locations

Each Area supports a subset of 31 Navy Recruiting Districts (NRDs). In turn, each NRD supports a collection of recruiting zones which cover one or two states. Within each zone, there is a collection of recruiting stations from which the recruiters operate.

B.   RECRUITING PROCESS

The recruiters begin the enlistment process by contacting *prospects*, typically 17-21 year old individuals, through high school visits, job fairs, recruiting stations, and telephone interviews. If prospects decide to pursue their interest in the military, they then become *applicants*. The applicants undergo a series of tests to determine their mental skills, mechanical aptitude, and medical condition. Upon satisfactory completion of the tests, the applicant chooses a military job assignment, known as a rate, and signs an enlistment contract. The enlistment contract is a legal document which binds the applicant to obligated military service for a pre-determined length of time. The length of obligated service may vary from applicant to applicant. Two years is the current minimum length of obligated service. After signing the enlistment contract, the applicant is referred to as a *contract*. The individual becomes an *accession* on the day that he or she enters recruit training, informally known as boot camp.

There are two paths to accession. The first path allows the contract to ship to recruit training during the same month that the contract is signed. This type of recruit is

called a *direct shipper (DS)*. For management purpose, large numbers of direct shippers are undesirable for they have a higher rate of in-service attrition after induction to recruit training [Bohn and Schmitz, 1995]. Additionally, it does not allow sufficient time to conduct thorough background security checks on the contracts. Currently, NRC allows less than 10% of recruits to be direct shippers. The second path allows a contract more flexibility, for it allows the potential recruit to delay his or her accession date between one month and a year from the contract signing date. While waiting for training, applicants enter the delayed entry program or DEP.

For planning purposes, NRC groups recruit contracts into two categories: *High School (HS)* and *Work Force (WF)*. HS recruits sign enlistment contracts prior to their high school graduation. On the other hand, WF recruits have already graduated from high school and are considered to have been employed in the civilian sector. The HS and WF categories differ in several ways. First, recruiting methods vary between categories. Recruiters are able to contact large populations of HS prospects through high school visits and job fairs. A single two hour visit may produce five applicants. On the other hand, recruiters spend more time contacting WF prospects since they must be individually contacted. Second, DEP lengths for HS recruits tend to be longer since they must receive their high school diploma before entering recruit training. Many HS recruits sign contracts early in their senior year of high school. As a result, they tend to have DEP lengths of six months or longer. WF recruits are available to enter recruit training immediately.

C.   DELAYED ENTRY PROGRAM (DEP)

In addition to providing flexibility, the Delayed Entry Program offers other advantages. Recruiters regularly schedule meetings with recruits in the DEP, commonly referred to as *DEPers*, in order to increase the level of communication, conduct preliminary training and answer questions. DEPers have the opportunity to conduct peer recruiting. If a DEPer can refer enough of his friends to a recruiter to sign enlistment contracts, the DEPer will be authorized to enter the Navy at a higher paygrade. The Navy gains from peer recruiting because it reduces the recruiters' workload.

DEP also acts as a quality control filter. The recruiter may determine through his scheduled meetings that a DEPer is no longer eligible to enter the Navy. DEPers involved in drug use, criminal arrests, too many speeding tickets and various misdemeanor offenses cannot enter the Navy. The DEP also allows an individual time to reflect on his or her decision to enter the military. The DEP may afford a recruit the time to research and consider alternative job offers. This opportunity relieves apprehension and improves morale, thus reducing the chance of becoming an attrition later in his or her Navy career.

The Delayed Entry Program also has its disadvantages. Occasionally, DEPers will become disenchanted with their decision to join the Navy and renege on their contracts, become DEP losses. Other types of DEP attrition are due to incapacitating injuries and severe illness. NRC loses up to 20% of all recruits to DEP loss [Bohn, 1995]. However, DEP loss for NF recruits is slightly lower. Table 2 displays the percentage of DEP loss for all NF recruits along with the DEP loss percentages for the HS and WF groups. HS recruits have a higher DEP loss percentage. Due to longer DEP lengths, HS recruits are more likely to reconsider their decision to join the Navy and may decide to pursue other jobs or a college education. However, WF recruits are more interested in immediate employment and tend to be more focused on their decision to enlist.

	HS	WF	Total NF
FY 1991	0.2088	0.1384	0.1672
FY 1992	0.2166	0.1401	0.1764
FY 1993	0.2210	0.1393	0.1794
FY 1994	0.2100	0.1156	0.1633
Average	0.2141	0.1334	0.1716

Table 2. Annual DEP Loss Percentage for Nuclear Power Field Recruits, Separated by High School and Work Force Origins

D.   ACCESSION GOALS

Prior to each fiscal year, the Bureau of Naval Personnel establishes the monthly and annual *accession goals* for NRC. The annual accession goal is the number of recruits who must enter recruit training for the coming fiscal year. To ensure steady progress, the

monthly accession goal requires NRC to ship a required number of recruits to training in each month. Moreover, performance against the monthly accession goals serves as a barometer of how well NRC is achieving the annual accession goal. When NRC fails to achieve the goal in one month, considerable effort is expended to prevent a recurrence in future months.

E.   NEW CONTRACT OBJECTIVE

To achieve monthly accession goals, recruiters must find sufficient recruits in prior months to sign contracts. To ensure that the monthly accession goals are fulfilled, NRC sets a *new contract objective (NCO)* which specifies the number of new enlistment contracts that must be signed in each month. By placing new contracts in DEP for various lengths, accession goals in future months can be achieved. To manage DEP attrition, the strategy of placing new contracts in DEP is critical. Placing new contracts in the DEP too long increases attrition, while placing them too short increases workload at various levels of the recruiting organization.

NRC analysts utilize a NCO forecasting model to establish the monthly new contract objective. The model predicts the expected number of new contracts that can be signed within each geographic area. Inputs to the model include socio-economic data such as unemployment rates, local economy strength, and population density. The NCO forecasting model does not include DEP loss in its analysis.

F.   PRIOR WORK ON DEP LOSS AND DEP PLACEMENT

All military recruiting organizations are faced with the problem of predicting DEP loss impact on their recruiting missions. Previous research [Matos, 1994 and Celeste , 1985] has shown that as time in DEP increases, so does the probability of DEP loss. On the other hand, as time in DEP increases, the probability of a recruit completing the terms of his or her enlistment contract upon completion of recruit training increases. This behavior is significant due to associated recruiting and training costs. Longer DEP lengths require increased resource allocation, primarily in the form of recruiter interaction. Recruiting organizations must determine whether it is more desirable to have recruits complete DEP, i.e., shorter DEP lengths, or have recruits complete the terms of their enlistment contract, i.e., longer DEP lengths. Magnaris and Phillips [1985]

investigated this behavior and recommended DEP lengths which balance recruiting and training costs versus DEP length. They assigned recruiting costs to the various DEP lengths and training costs to the first-term training, i.e., training received after initial recruit training. Recommended DEP lengths were determined by minimizing the total cost with respect to the DEP loss probability associated with that particular DEP length. Recommended DEP lengths are found to vary by rating category, i.e., occupation, and type of recruit category. Burris [1993] used DEP loss profiles while developing quarterly contract missions for the U.S. Army Recruiting Command (USAREC). He implemented an optimization model which minimizes overall expected cost of the contract mission due to DEP loss. Burris considered the available recruiting force and the number of recruiting days available in each calendar month. His model develops the NCO required to achieve the accession goals.

This thesis develops a DEP placement strategy which utilizes DEP loss to ensure that monthly accession goals are achieved with a desired probability. The strategy is developed using an optimization based tool to determine the optimal placement of recruits in the DEP which minimizes overall recruiting costs due to DEP loss. The DEP placement model is unique because it provides the user with a placement strategy for each monthly NCO which will ensure that the accession goal is met with a desired probability.

III. DEP PLACEMENT MODEL

As previously stated, NRC analysts are responsible for developing the monthly and annual NCO for each of the four recruiting Areas. The NCO forecasting model is used solely for predicting the number of contracts that are expected to be signed. It does not forecast DEP losses nor does it develop a DEP placement strategy for each contract. Currently, no placement strategy exists which suggests how to place recruits in the DEP to guarantee that each monthly accession goal is obtained.

In this chapter, an optimization model is introduced to assist NRC analysts in developing a DEP placement strategy. Section A presents the problem statement. Section B presents the mathematical formulation of the DEP placement model.

A.   PROBLEM STATEMENT

The goal of developing a DEP placement strategy is to minimize the total cost of achieving the annual recruiting goal by reducing the number of DEP losses. By placing contracts into DEP lengths with the lowest probability of DEP loss, overall recruiting costs may be lowered due to fewer DEP losses. The model is implemented with a 24 month planning horizon because many HS recruits sign contracts in one FY but access during the following FY. By extending the planning horizon, the model must consider the effects of the placement strategy on the outlying year. For example, a recruit signing a contract with a 9 month DEP length in June 96 will not access until March 97. Thus, the attainment of the March 97 accession goal must be considered.

B.   MATHEMATICAL FORMULATION

The DEP placement strategy is formulated as a nonlinear program. It is a nonconvex model. Thus, there is no guarantee of obtaining a globally optimal solution. All results discussed in this thesis were obtained from a locally optimal solution.

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1. Indices

a month the contract is accessed to recruit training

c month the enlistment contract is signed

t type of contract, e.g., HS ,WF

2. Index Set

H^t_c the set of permissible accession months for contract type t in the planning horizon for contract month c

$$H^t_c = \{a: c < a \leq c+12\}$$

3. Data

a. NCO and Accession Goal Data

cu cost associated for not meeting the minimum probability of achieving the monthly accession goal

gl_a accession goal in month a

nc_c new contract objective for month c

z_α standardized normal value representing the minimum probability of achieving monthly accession goal

b. DEP Loss Probability Data

$da^t(a\text{-}c)$ DEP loss probability of length $(a\text{-}c)$ for contract type t

daa_c DEP loss probability for direct shipment contracts for month c

$ds^t(a\text{-}c) = 1 - da^t(a\text{-}c)$ DEP survival probability of length $(a\text{-}c)$ for contract type t

$dss_c = 1 - daa_c$ DEP survival probability for direct shipment contracts for month c

c. DEP Pool Data

pa mean probability of attriting DEP of unknown length

pl_a recruits in DEP pool scheduled to access in month a

ps mean probability of surviving DEP of unknown length

d. Direct Shipper Data

dsb_1 upper bound on first increment of direct shipment contracts

dsb_2 upper bound on second increment of direct shipment contracts

$tc1$ cost associated with recruiting the lower increment of direct shipment contracts

$tc2$ cost associated with recruiting the upper increment of direct shipment contracts

Direct shippers are managed in two increments. As discussed in Chapter II, NRC prefers to minimize the number of direct shippers but considers a small number of DS recruits to be acceptable to meet personal needs of the recruits. The lower increment allows NRC to manage a small number of these recruits. The upper increment of DS recruits is used to achieve monthly accession deficits. The upper increment is less desirable and is assigned increased recruiting costs to meet the "just in time" recruiting effort.

e. Contract Type Data

lb lower bound on proportion of WF contracts

ub upper bound on proportion of WF contracts

4. Decision Variables

E_a accession deficit in month a

X_{ca}^t proportion of type t contracts signed in month c that are scheduled to access in month a

$Y1_c$ proportion of lower level direct shipment contracts signed in month c

$Y2_c$ proportion of upper level direct shipment contracts signed in month c

5. Objective Function

The primary component in the objective function is to minimize the sum of the recruiting costs associated with DEP and direct shipment contracts. The secondary component is to minimize the sum of the penalties for monthly accession deficits. The

assigned recruiting costs are not operational expenditures. The costs are weighted with respect to the desired recruit category. Contracts placed in DEP are most desirable to NRC so these contracts are assigned a relative cost of one unit. The two increments of direct shippers, $Y1_c$ and $Y2_c$, are less desirable and are assigned increasing costs. The accession deficit, E_a, is the least desirable and is assigned a large penalty cost. The objective function is:

$$MINIMIZE \quad \sum_t \sum_c \sum_{a \in H'_c} nc_c \cdot X^t_{ca} + tc_1 \sum_c nc_c \cdot Y1_c + tc_2 \sum_c nc_c \cdot Y2_c + cu \sum_a E_a$$

6. Constraints

a. Accession Goal Attainment

This constraint ensures that the monthly accession goal is attained with the desired confidence level. Contracts are assumed to be independent Bernoulli trials, with a constant probability, p, of <u>not</u> becoming a DEP loss. Applying the Normal Approximation to the Binomial Distribution [Devore 1995, Winston 1991] ensures that the probability of achieving the monthly accession goal is greater than or equal to the

desired confidence level, 1- α. The Normal Approximation is $P(X \leq x) = \Phi\left(\dfrac{x - np}{\sqrt{npq}}\right) \leq$

z_α where X is the number of monthly accessions, x is the monthly accession goal, np is the expected number of accessions, $\sqrt{npq}$ is the accession standard deviation and z_α is the critical z value for the desired confidence level.

The application of the Normal Approximation to the DEP placement problem resulted in the following terms. First, the monthly accession goal is represented by gl_a. Second, the expected number of monthly accessions is the sum of the expected number of DEP contracts and the two direct shipper increments. Finally, the accession deficit, E_a, is an elastic variable which ensures that the problem always yields a feasible solution in addition to identifying any potential deficits.

$$\frac{gl_a - \left(\sum_{t}\sum_{c=\max\{1,a-12\}} ds^t_{(a-c)}nc_c \cdot X^t_{ca}\right) - \sum_c dss_c \cdot nc_c \cdot \left(Y1_c + Y2_c\right) - pl_a \cdot ps - E_a}{SQRT\left[\left(\sum_{t}\sum_{c=\max\{1,a-12\}}^{a} ds^t_{(a-c)} \cdot da^t_{(a-c)} \cdot nc_c \cdot X^t_{ca}\right) + \sum_c dss_c \cdot daa_c \cdot nc_c \cdot \left(Y1_c + Y2_c\right) + pl_a \cdot ps \cdot pa\right]}$$

$$\leq z_\alpha \qquad\qquad\qquad \forall a$$

b. NCO Distribution

This constraint ensures that the proportion of the monthly NCO used to develop the placement strategy does not exceed 100%.

$$\sum_{t}\sum_{a \in H'_c} X^t_{ca} + Y1_c + Y2_c \leq 1.00 \qquad\qquad \forall c$$

c. Distribution of Contract Type

These two constraints ensure that the proportion of WF contracts stays within upper and lower bounds set by NRC. Without the upper bound, the model might tend towards Work Force recruits exclusively, because they generally have lower attrition rates than High School recruits. These ratio constraints are converted to linear constraints in the model implementation by multiplying through by the denominator.

$$\frac{\sum\limits_{a \in H_c} X^{wf}_{ca}}{\sum\limits_{t}\sum\limits_{a \in H_c} X^t_{ca}} \geq lb \qquad\qquad \forall c$$

$$\frac{\sum\limits_{a \in H_c} X^{wf}_{ca}}{\sum\limits_{t}\sum\limits_{a \in H_c} X^t_{ca}} \leq ub \qquad\qquad \forall c$$

d. Direct Shippers

These two constraints ensure that the number of direct shippers stays within the desired limits set by NRC. The two increments are based upon the actual number of direct shippers. It does not adjust the number of direct shippers with respect to level of the monthly level.

$$0 \leq nc_c \cdot Y1_c \leq dsb_1 \qquad\qquad \forall c$$

$$dsb_1 + 1 \leq nc_c \cdot \left(Y1_c + Y2_c \right) \leq dsb_2 \qquad \forall c$$

e. Nonnegative Variables

This constraint simply ensures that all variables are nonnegative.

$$0 \leq X^t_{ca}, Y1_c, Y2_c, E_a \qquad\qquad \forall c \ and \ a \in H^t_c$$

IV. MODEL IMPLEMENTATION AND ANALYSIS

The DEP placement problem described in Chapter IV was implemented using GAMS[Brooke, *et al*, 1992] on a Pentium 90 personal computer. To ensure that the model always produces a solution, an artificial (or elastic) variable is added to the model. The artificial variable represents the monthly accession deficit that exists if the solution cannot achieve accession goals with the desired confidence level. In the objective function, the accession deficit is assigned a large penalty cost. When the DEP placement problem has a feasible solution, the optimal values for the accession deficit are zero. Otherwise, an optimal solution with non-zero accession deficits indicates months when accession goals are not fulfilled. To make the problem feasible, NRC analysts can increase the NCO distribution until no accession deficit exists.

This chapter describes the data inputs, model outputs and sample analysis associated with the DEP placement model. Section A discusses all of the required data necessary to produce a placement strategy. Section B describes the model outputs and solution reports. Section C provides a sample analysis of the model output.

A.   DATA INPUTS

The necessary data for producing a DEP placement strategy was extracted from the FY1996 NRC recruiting plan. Data inputs include the monthly NCO distribution, accession goals, DEP pool inventory and DEP loss profiles. The monthly NCO specifies the number of new enlistment contracts that must be signed in each month. The annual accession goal is the number of recruits that must enter recruit training each month of the coming fiscal year. The monthly accession goal is fulfilled by contracts enrolled in DEP and direct shippers. The DEP pool inventory identifies the number of contracts which were signed during the previous year and are scheduled to contribute to the monthly accession goals. DEP loss profiles predict the likelihood of a recruit attriting from DEP for a given contract month and accession month. Table 3 displays the data inputs extracted from the FY1996 NRC recruiting plan.

	OCT	NOV	DEC	JAN	FEB	MAR
NCO	271	275	286	288	274	289
Accession Goal	250	250	276	286	258	286
DEP pool	250	250	221	182	126	47

	APR	MAY	JUN	JUL	AUG	SEP
NCO	275	277	337	340	341	333
Accession Goal	267	286	307	316	316	281
DEP pool	21	28	139	155	31	12

Table 3. Model Input for FY1996 Recruiting Plan

1. DEP Loss Profiles

To produce a DEP placement model for this thesis, baseline HS and WF DEP loss profiles for each contract month are required. DEP loss profiles provide the DEP loss probability for various DEP lengths. The DEP loss profiles display variability among the FYs which may be caused by changes in recruiting policies or force structure (downsizing). Policy changes including more stringent drug testing and fewer waivers for disciplinary incidents contribute to the variability. To reduce variability and provide a better historical approximation for DEP loss, the baseline profile is constructed using the *average* DEP loss probability for each contract month during FY1991-94.

2. Estimating DEP Loss

One approach for estimating probabilities is to view the number of DEP losses for a given contract month and DEP length as a binomial random variable with parameters N_{cl} and p_{cl}. Note that the DEP length, l, is the difference between contract and accession months. Here, N_{cl} is the number of contracts in month c with DEP duration l months and p_{cl} is the corresponding probability of DEP loss. Then an unbiased estimator [Devore, 1994] for p_{cl} is given by

$$\hat{p}_{cl} = \frac{L_{cl}}{N_{cl}}$$

where L_{cl} is the total number of DEP losses and N_{cl} is the total number of contracts summed over FY1991-94 in month c with DEP duration l months.

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B.   MODEL OUTPUTS

Using the inputs described above, the resulting optimal solution contains 493 continuous variables, 144 constraints, and 2856 non-zero elements. The problem requires 5.88 cpu seconds on a Pentium 90 personal computer to produce a locally optimal solution. Because different solutions have been obtained by using various starting points, we know that the model is nonconvex. Therefore, we cannot guarantee that the solution produced is globally optimal. The solution consists of the DEP placement strategy, the number of direct shippers and the accession deficit. The DEP placement strategy distributes the monthly NCO among the possible DEP length combinations to ensure that the accession goal is obtained with minimal DEP loss. Should a fractional number of contracts be accessed, or shipped to recruit training, in any month, the result may be rounded

The GAMS implementation of the model summarizes the optimal solution in a report format which can be displayed using any commercial spreadsheet software. The report identifies the placement strategy for HS and WF recruits. Additionally, it annotates the expected number and standard deviation of the monthly accessions and the monthly accession deficits. A complete report can be found in Appendix B. Figure 2 displays an excerpt of the original solution using FY1996 recruiting data. To illustrate, 9.2% of the October NCO should be used to place WF recruits as Direct Shippers in October. Another 18.8% of the October NCO will place WF recruits in DEP until November. It is important to note that HS recruits generally cannot ship to boot camp until after their HS graduations. As a result, HS recruits are not scheduled to ship prior to June.

Objective Function: 24052.847

HS Contracts

	Accession Months											
	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
OCT FY1	0	0	0	0	0	0	0	0	0	0	0.372	0
NOV FY1	0	0	0	0	0	0	0	0	0	0.196	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0.371	0	0

HS Contracts

	Accession Months											
	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY1	0	0	0	0	0	0	0	0	0	0	0	0
NOV FY1	0.254	0	0	0	0	0	0	0	0	0	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0	0	0

Objective Function: 24052.847

WF Contracts

	Accession Months											
	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
OCT FY1	0	0.188	0	0	0	0	0	0	0.111	0	0	0.156
NOV FY1	0	0	0.192	0.335	0	0	0.023	0	0	0	0	0
DEC FY1	0	0	0	0	0.414	0.040	0	0	0	0	0	0

WF Contracts

	Accession Months											
	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY1	0	0	0	0	0	0	0	0	0	0	0	0
NOV FY1	0	0	0	0	0	0	0	0	0	0	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0	0	0

Direct Shippers

	Accession Months											
	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
1st increment	0.092	0	0.087	0.087	0.091	0.087	0.091	0.09	0.074	0.074	0.073	0.075
2nd increment	0.080	0	0.087	0.087	0.091	0.087	0.091	0.09	0.074	0.074	0.073	0.075

Accession Deficit

Accession Months		
OCT FY1	NOV FY1	DEC FY1
0	0	0

Expected Number of Accesions

Accession Months		
OCT FY1	NOV FY1	DEC FY1
259.287	259.779	285.453

Standard Deviation

Accession Months		
OCT FY1	NOV FY1	DEC FY1
5.646	5.944	5.746

Figure 2. Sample Output Using FY1996 DEP Placement Data

C.   PARAMETRIC ANALYSIS

Three parametric analyses were conducted. The first analysis determines the loss of optimality induced by rounding the fractional number of accessions to the nearest integer. The second analysis gradually increases the monthly NCO until all accession deficits are eliminated with the desired confidence level kept at 95 %. The third analysis determines the minimum confidence level for fulfilling accession goals for each monthly NCO increase used in the first analysis.

1.   Integer Rounding of Monthly Accessions

The model implementation allows a fractional number of accessions to be shipped to recruit training in any month. The fractional number of accessions can be rounded to the nearest integer with negligible loss of optimality. To obtain the number of contract

accessions for accession month a, we multiply the NCO from contract month c by the DEP survival probability, $ds^t(a-c)$, and the proportion of contracts scheduled to access in month a, X^t_{ca}. The following equation illustrates the approach:

$$accessions = nc_c \cdot ds^t(a-c) \cdot X^t_{ca}$$

To achieve an integer number of contract accessions, X^t_{ca} must be adjusted. The new value for X^t_{ca}. *prime*, the proportion of contracts necessary to provide an integer number of accessions, is computed by the following equation:

$$X^t_{ca} \, prime = \frac{round(nc_c \cdot ds^t(a-c) \cdot X^t_{ca})}{nc_c \cdot ds^t(a-c)}$$

A similar computation is performed for the number of direct shippers. In our computational experiences, we achieved an objective function value of 24052.84. After performing the integer rounding method, the objective function value was 24072.00. Thus, the resulting rounded solution degrades the objective function value by only 0.08 percent.

2. Uniform Increase of Monthly NCO

The NCO was increased by the same percentage each month to determine the necessary NCO levels that fulfill all monthly accession goals with a 95% confidence level. Table 4 provides increased NCO levels, the associated objective function values, and the total monthly accession deficits for the model runs. The objective function value is the sum of the relative recruiting costs with regards to the DEP and direct shipper contracts plus the penalty costs for the accession deficit. Table 4 shows that to eliminate all monthly accession deficits, all monthly NCO levels must be increased by 20%.

Increase of FY1996 NCO	Objective Function Value	Accession Deficit
0.0 %	24,052.84	791.68
10.0 %	20,109.67	584.93
15.0 %	14,249.69	379.74
18.0 %	9,479.40	179.01
19.0 %	5,732.79	21.21
20.0 %	5,143.06	0.00

Table 4. Uniform Increases of FY1996 NCO Levels

This parametric analysis requires all monthly NCOs to increase at the same rate. A more general approach, allowing different size increases, might yield more acceptable results. This avenue of approach is open to further study.

3.   **Minimum Confidence Levels of Fulfilling Monthly Accession Goals**

The uniform increases in the FY1996 NCO were not sufficient to fulfill all monthly goals with a desired confidence level of 95%. However, each NCO level has an associated confidence level for attaining accession goals. For each uniform increase in the monthly NCO, the minimum confidence level, z_α, was reduced until all accession deficits were eliminated. Table 5 displays the minimum confidence levels associated with each increase in the NCO levels which eliminate all monthly accession deficits.

Increase of FY1996 NCO	Minimum Confidence Level for Fulfilling Monthly Accession Goals
0.0 %	0.00 %
10.0 %	0.00 %
15.0 %	2.81 %
18.0 %	51.10 %
19.0 %	91.62 %
20.0 %	95.00 %

Table 5. Minimum Confidence Levels for Increases of FY1996 NCO Levels

V. CONCLUSION

A.   SUMMARY

This thesis addresses the problem of determining a DEP placement strategy that achieves monthly accession goals and minimizes overall recruiting costs due to DEP losses. The approach to solving this problem involves two area of operations research: statistics and optimization. The statistical aspect involves estimating DEP loss profiles for HS and WF Nuclear Field recruits. Using the probability estimates, the problem is formulated as a non-linear program which minimizes overall recruiting costs. The constraints within the problem guarantee that the month accession goal is obtained with a desired confidence level. Should the NCO distribution be insufficient to support the accession goal with the desired confidence level, a monthly accession deficit is identified.

The DEP placement model is implemented in GAMS and tested using NF recruit data provided by NRC. The model output includes the NCO placement strategy for a twelve month planning horizon. Additionally, the expected number of monthly accessions is calculated using the binomial assumption.

In addition to providing the optimal DEP placement strategy, the model can be used as a tool to analyze various recruiting policies. In particular, Chapter IV identifies the necessary increase in the FY1996 monthly NCO distribution to achieve all accession goals with a 95% confidence level.

B.   AREAS FOR FUTURE RESEARCH

Three topics for future research are presented below. The recommendations for future research are based on application of the DEP placement model developed in this thesis.

1. DEP Placement for Other Recruit Types

The model described in Chapter IV addresses the placement problem only for HS and WF Nuclear Field recruits. The model should be expanded to develop DEP loss profiles and placement strategies for A-school and GenDet recruits. Matos [1994] showed that female recruit DEP loss was higher than their male counterparts. Further analysis can develop a DEP placement strategy for gender type within each category.

2. DEP Placement by Area

The model addresses the DEP placement problem at the NRC headquarters level. The next step in the process is to allocate the monthly NCO at the next level in the hierarchy: the four Areas. DEP loss profiles and the resulting placement strategy should be calculated for each Area.

3. Development of NCO Distribution and DEP Placement Strategy

The model is constructed with the assumption that the monthly NCO, accession goals, and DEP pool levels are provided as inputs to the planning horizon. The development of a model to determine an efficient DEP placement strategy and the monthly NCO should be considered. Since the attainment of the monthly accession goals is the primary concern, a tool that develops the monthly NCO and the associated DEP placement strategy would be more useful to NRC analysts. The current NCO forecasting model results could be compared to the optimization results in order to determine operational feasibility.

4. Development of Alternative Model Formulations

Using the Normal Approximation to ensure achievement of the accession goal resulted in a nonconvex model which produces locally optimal solutions. Alternate model formulations should be investigated that can guarantee a globally optimal solution. The probabilistic nature of DEP lengths and associated recruit categories should remain integral to the approach to accurately forecast DEP attrition throughout the planning horizon.

APPENDIX A. DEP LOSS PROBABILITY PROFILES

Appendix A displays the DEP loss profiles which provide necessary data to the optimization based DEP placement model developed in Chapter III. DEP loss profiles predict the DEP loss probability for various DEP lengths. For example, the DEP loss profile for HS contracts who signed enlistment contracts in January of FY1992 shows that the probability of DEP loss for a HS recruit with a nine month DEP length is 0.1628. It is important to note that the outliers present in the DEP loss profiles are the result of a small sample size. To illustrate, all three January FY1991 HS contracts with a DEP length of six months became a DEP loss resulting in a DEP loss probability of 1.00. In the event that only one of the three contracts became a DEP loss, the resulting DEP loss probability for a six month DEP length would still have been higher than the January FY1991 HS average of 0.2907. As the sample size increases, the impact of a single contract becoming a DEP loss is reduced.

January High School (HS) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	1	0	3	9	15	26	12	19	1	86
FY 92	0	0	0	0	1	4	22	21	49	43	21	18	9	188
FY 93	0	0	0	0	0	3	2	8	19	25	42	16	5	120
FY 94	0	0	0	0	0	8	7	12	21	17	8	0	0	73
Total FY91-94 Contracts	0	0	0	0	2	15	34	50	104	111	83	53	15	467

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	0	3	7	4	0	3	8	0	25
FY 92	0	0	0	0	0	1	5	2	9	7	3	2	3	32
FY 93	0	0	0	0	0	0	0	2	5	3	11	3	2	26
FY 94	0	0	0	0	0	2	0	0	4	3	2	0	0	11
Total DEP Losses	0	0	0	0	0	3	8	11	22	13	19	13	5	94

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0116	0.0000	0.0349	0.1047	0.1744	0.3023	0.1395	0.2209	0.0116	1.0000
FY 92	0.0000	0.0000	0.0000	0.0000	0.0053	0.0213	0.1170	0.1117	0.2606	0.2287	0.1117	0.0957	0.0479	1.0000
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0250	0.0167	0.0667	0.1583	0.2083	0.3500	0.1333	0.0417	1.0000
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.1096	0.0959	0.1644	0.2877	0.2329	0.1096	0.0000	0.0000	1.0000
Average DEP Length Distribution	0.0000	0.0000	0.0000	0.0000	0.0043	0.0321	0.0728	0.1071	0.2227	0.2377	0.1777	0.1135	0.0321	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.7778	0.2667	0.0000	0.2500	0.4211	0.0000	0.2907
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.2500	0.2273	0.0952	0.1837	0.1628	0.1429	0.1111	0.3333	0.1702
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2500	0.2632	0.1200	0.2619	0.1875	0.4000	0.2167
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.2500	0.0000	0.0000	0.1905	0.1765	0.2500	0.0000	0.0000	0.1507
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.2000	0.2353	0.2200	0.2115	0.1171	0.2289	0.2453	0.3333	0.2013

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.4024	0.3779	0.3348	0.2900	0.1769	0.3193	0.3611	0.5719	0.2377
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.2000	0.2353	0.2200	0.2115	0.1171	0.2289	0.2453	0.3333	0.2013
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0927	0.1052	0.1330	0.0573	0.1385	0.1294	0.0948	0.1649

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

Average FY91-94 January HS Contracts
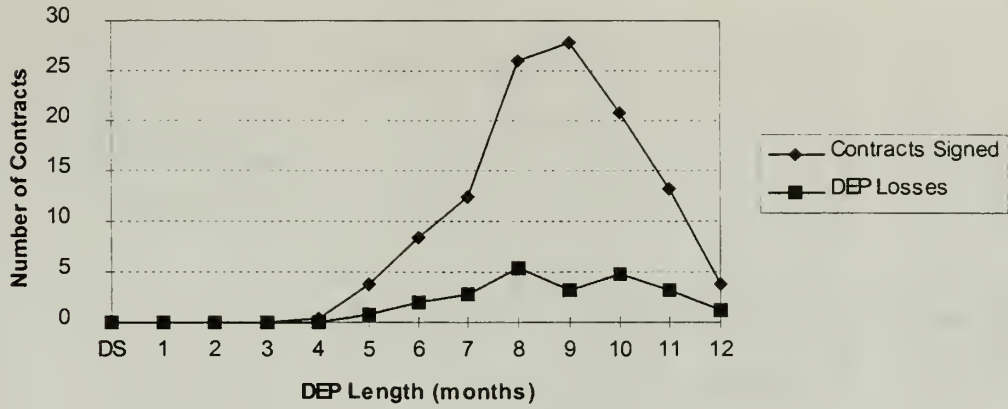
Total FY91-94 January HS Contracts
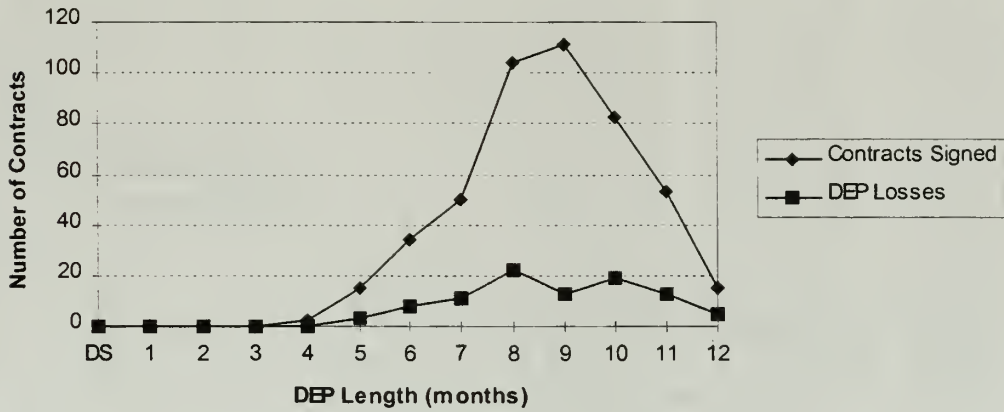
FY91 January HS Contracts

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FY92 January HS Contracts
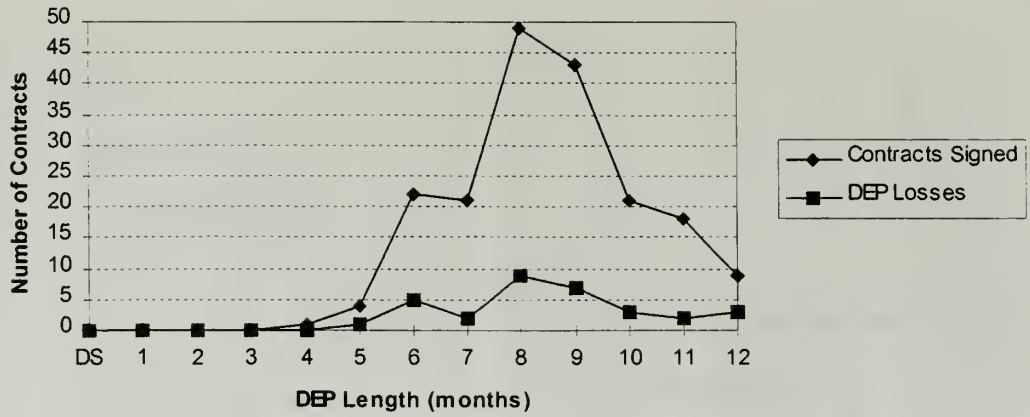
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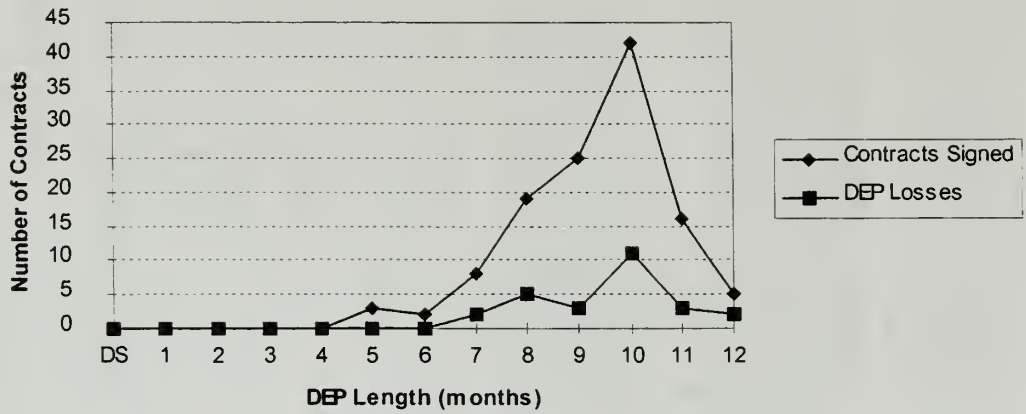
FY94 January HS Contracts
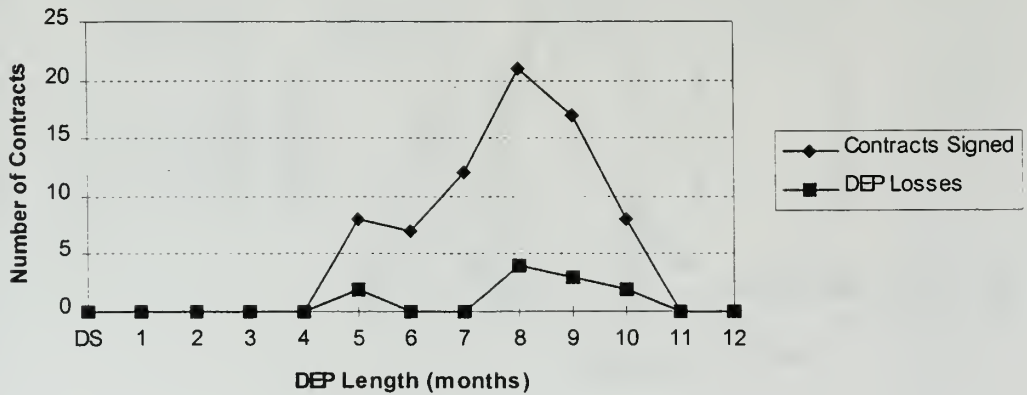
February High School (HS) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	0	4	3	22	4	9	18	3	63
FY 92	0	0	0	2	3	10	18	15	18	56	33	22	18	195
FY 93	0	0	0	1	2	2	1	11	18	33	31	20	0	119
FY 94	0	0	0	0	6	2	3	8	28	30	5	0	0	82
Total FY91-94 Contracts	0	0	0	3	11	14	26	37	86	123	78	60	21	459

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	0	2	3	2	0	6	8	1	22
FY 92	0	0	0	0	0	0	5	1	5	18	5	4	5	43
FY 93	0	0	0	0	1	0	0	1	7	6	10	5	0	30
FY 94	0	0	0	0	0	0	1	4	7	7	1	0	0	20
Total DEP Losses	0	0	0	0	1	0	8	9	21	31	22	17	6	115

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0635	0.0476	0.3492	0.0635	0.1429	0.2857	0.0476	1.0000
FY 92	0.0000	0.0000	0.0000	0.0103	0.0154	0.0513	0.0923	0.0769	0.0923	0.2872	0.1692	0.1128	0.0923	1.0000
FY 93	0.0000	0.0000	0.0000	0.0084	0.0168	0.0168	0.0084	0.0924	0.1513	0.2773	0.2605	0.1681	0.0000	1.0000
FY 94	0.0000	0.0000	0.0000	0.0000	0.0732	0.0244	0.0366	0.0976	0.3415	0.3659	0.0610	0.0000	0.0000	1.0000
Average DEP Length Distribution	0.0000	0.0000	0.0000	0.0065	0.0240	0.0305	0.0566	0.0806	0.1874	0.2680	0.1699	0.1307	0.0458	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5000	1.0000	0.0909	0.0000	0.6667	0.4444	0.3333	0.3492
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2778	0.0667	0.2778	0.3214	0.1515	0.1818	0.2778	0.2205
FY 93	0.0000	0.0000	0.0000	0.0000	0.5000	0.0000	0.0000	0.0909	0.3889	0.1818	0.3226	0.2500	0.0000	0.2521
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3333	0.5000	0.2500	0.2333	0.2000	0.0000	0.0000	0.2439
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0909	0.0000	0.3077	0.2432	0.2442	0.2520	0.2821	0.2833	0.2857	0.2505

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.2608	0.0000	0.4851	0.3815	0.3350	0.3288	0.3819	0.3974	0.4789	0.2902
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0909	0.0000	0.3077	0.2432	0.2442	0.2520	0.2821	0.2833	0.2857	0.2505
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1303	0.1050	0.1534	0.1753	0.1822	0.1693	0.0925	0.2109

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

Average FY91-94 February HS Contracts
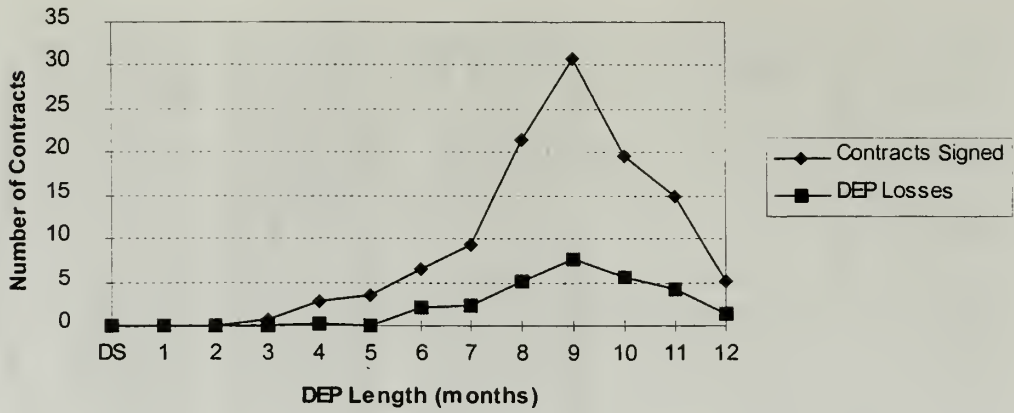
Total FY91-94 February HS Contracts
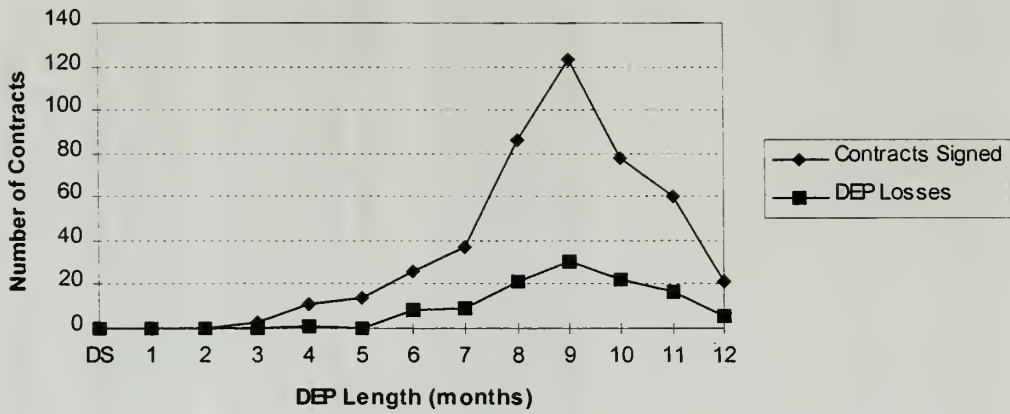
FY91 February HS Contracts

30
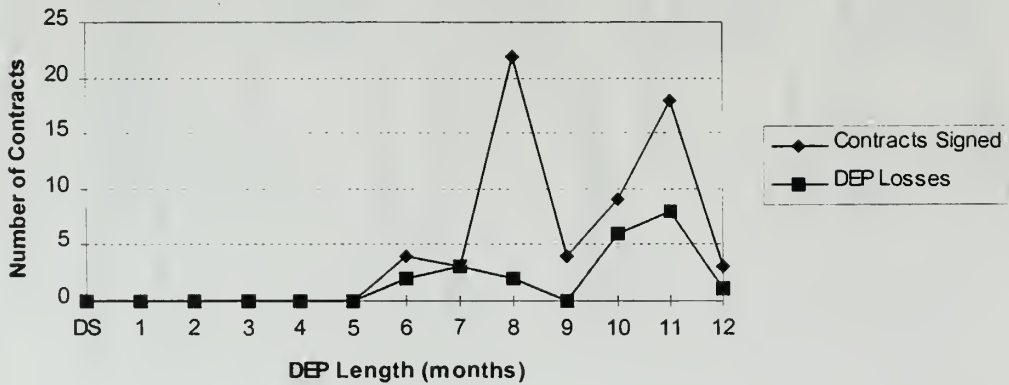
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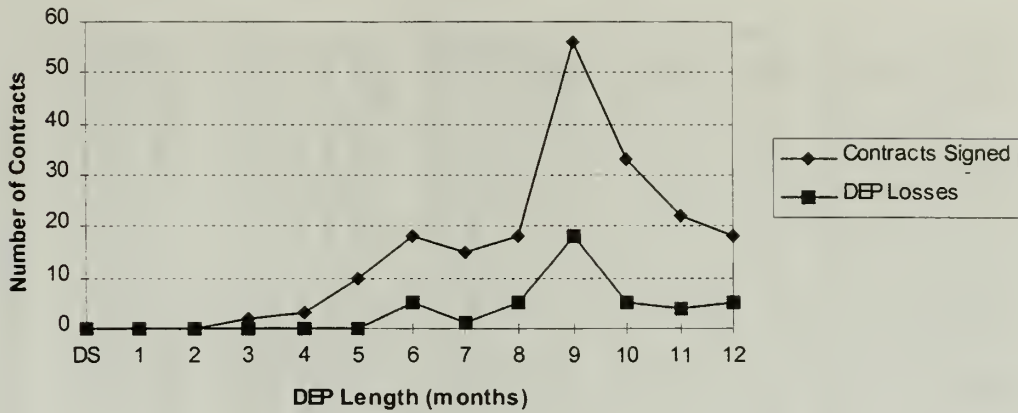
FY93 February HS Contracts

FY94 February HS Contracts

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March High School (HS) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	1	0	2	1	2	10	41	24	28	12	4	125
FY 92	0	0	0	1	6	5	6	8	25	27	37	13	8	136
FY 93	0	0	0	0	0	0	4	12	27	49	29	31	10	162
FY 94	0	0	0	2	3	4	13	6	26	11	13	12	0	90
Total FY91-94 Contracts	0	0	1	3	11	10	25	36	119	111	107	68	22	513

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	0	0	3	9	4	1	3	0	20
FY 92	0	0	0	0	1	0	0	0	2	4	10	1	4	22
FY 93	0	0	0	0	0	0	1	3	2	11	10	6	4	37
FY 94	0	0	0	0	1	1	2	1	6	4	5	3	0	23
Total DEP Losses	0	0	0	0	2	1	3	7	19	23	26	13	8	102

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0080	0.0000	0.0160	0.0080	0.0160	0.0800	0.3280	0.1920	0.2240	0.0960	0.0320	1.0000
FY 92	0.0000	0.0000	0.0000	0.0074	0.0441	0.0368	0.0441	0.0588	0.1838	0.1985	0.2721	0.0956	0.0588	1.0000
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0247	0.0741	0.1667	0.3025	0.1790	0.1914	0.0617	1.0000
FY 94	0.0000	0.0000	0.0000	0.0222	0.0333	0.0444	0.1444	0.0667	0.2889	0.1222	0.1444	0.1333	0.0000	1.0000
Average DEP Length Distribution	0.0000	0.0000	0.0019	0.0058	0.0214	0.0195	0.0487	0.0702	0.2320	0.2164	0.2086	0.1326	0.0429	1.0000

Prob[DEP Loss]

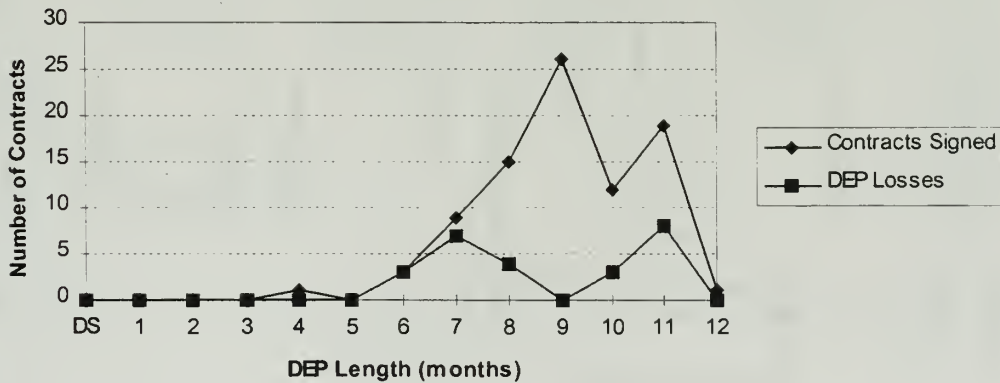|	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3000	0.2195	0.1667	0.0357	0.2500	0.0000	0.1600
FY 92	0.0000	0.0000	0.0000	0.0000	0.1667	0.0000	0.0000	0.0000	0.0800	0.1481	0.2703	0.0769	0.5000	0.1618
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2500	0.2500	0.0741	0.2245	0.3448	0.1935	0.4000	0.2284
FY 94	0.0000	0.0000	0.0000	0.0000	0.3333	0.2500	0.1538	0.1667	0.2308	0.3636	0.3846	0.2500	0.0000	0.2556
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.1818	0.1000	0.1200	0.1944	0.1597	0.2072	0.2430	0.1912	0.3636	0.1988

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.4097	0.2859	0.2474	0.3237	0.2255	0.2826	0.3243	0.2846	0.5647	0.2334
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.1818	0.1000	0.1200	0.1944	0.1597	0.2072	0.2430	0.1912	0.3636	0.1988
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0652	0.0939	0.1318	0.1617	0.0977	0.1626	0.1643

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

## Average FY91-94 March HS Contracts
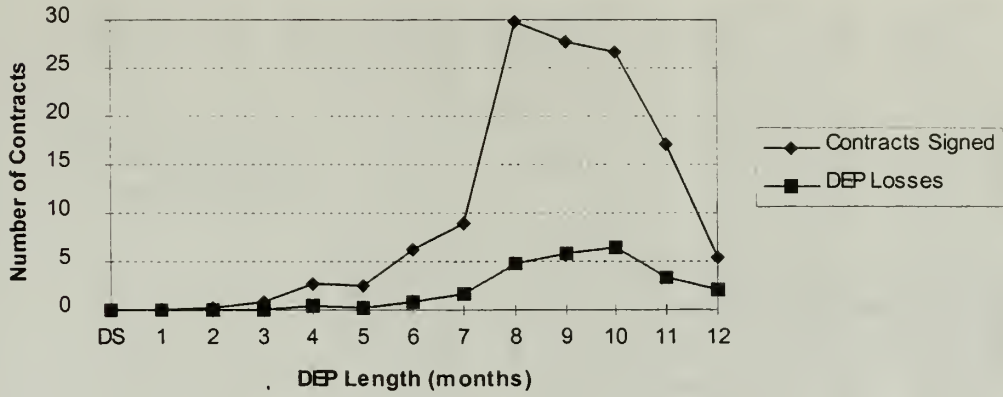

Total FY91-94 March HS Contracts
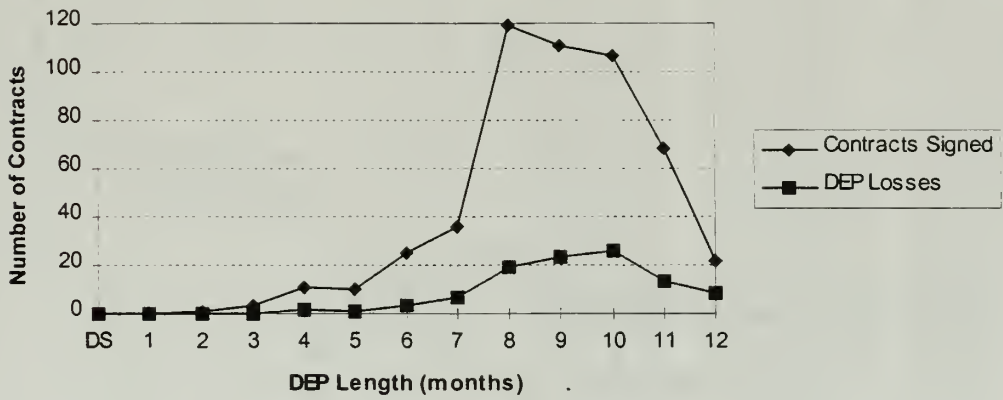
FY91 March HS Contracts

33
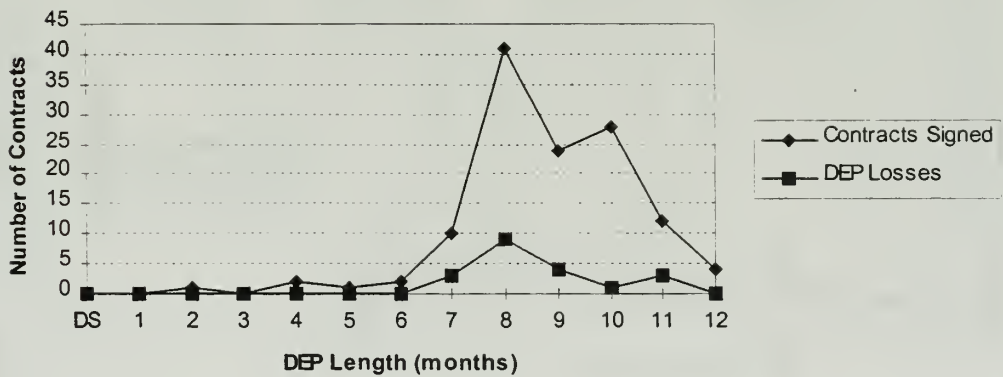
FY92 March HS Contracts
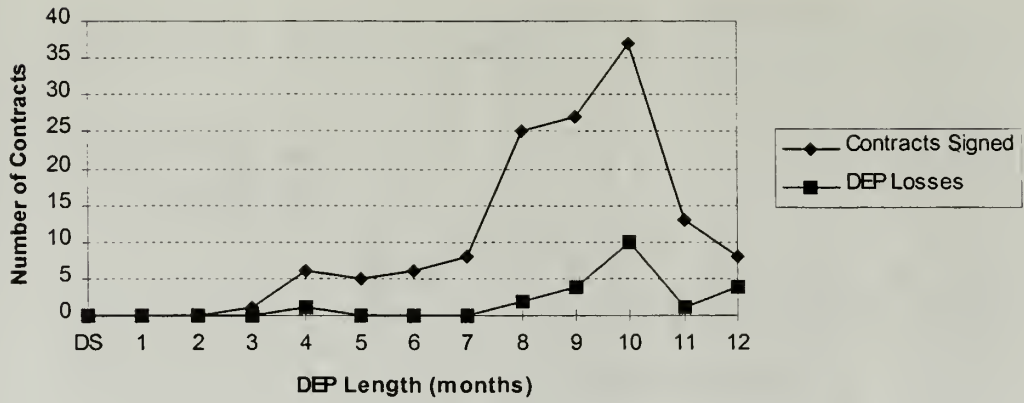
FY93 March HS Contracts
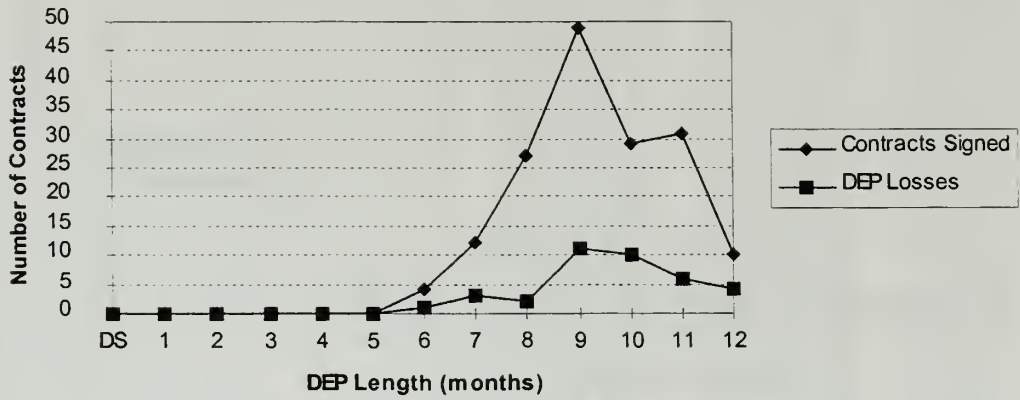
FY94 March HS Contracts
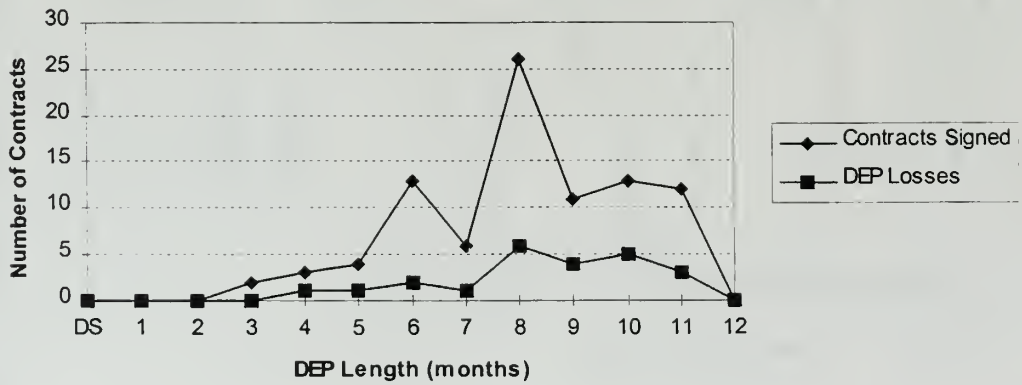
April High School (HS) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	2	0	1	2	8	10	42	39	27	24	1	156
FY 92	0	0	2	2	1	3	7	23	36	50	31	33	5	193
FY 93	0	0	1	2	1	3	0	8	33	28	27	24	4	131
FY 94	0	0	0	1	2	1	13	28	15	12	3	1	0	76
Total FY91-94 Contracts	0	0	5	5	5	9	28	69	126	129	88	82	10	556

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	1	1	0	8	7	1	2	0	20
FY 92	0	0	0	0	0	0	1	3	3	4	7	8	2	28
FY 93	0	0	0	2	0	1	0	0	6	4	6	8	0	29
FY 94	0	0	0	0	0	0	0	8	0	1	1	0	0	10
Total DEP Losses	0	0	0	2	0	2	2	11	17	16	15	18	4	87

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0128	0.0000	0.0064	0.0128	0.0513	0.0641	0.2692	0.2500	0.1731	0.1538	0.0064	1.0000
FY 92	0.0000	0.0000	0.0104	0.0104	0.0052	0.0155	0.0363	0.1192	0.1865	0.2591	0.1606	0.1710	0.0259	1.0000
FY 93	0.0000	0.0000	0.0076	0.0153	0.0076	0.0229	0.0000	0.0611	0.2519	0.2137	0.2061	0.1832	0.0305	1.0000
FY 94	0.0000	0.0000	0.0000	0.0132	0.0263	0.0132	0.1711	0.3684	0.1974	0.1579	0.0395	0.0132	0.0000	1.0000
Average DEP Length Distribution	0.0000	0.0000	0.0090	0.0090	0.0090	0.0162	0.0504	0.1241	0.2266	0.2320	0.1583	0.1475	0.0180	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.5000	0.1250	0.0000	0.1905	0.1795	0.0370	0.0833	0.0000	0.1282
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1429	0.1304	0.0833	0.0800	0.2258	0.2424	0.4000	0.1451
FY 93	0.0000	0.0000	0.0000	1.0000	0.0000	0.3333	0.0000	0.0000	0.1818	0.1429	0.2222	0.3333	0.5000	0.2214
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2857	0.0000	0.0833	0.3333	0.0000	0.0000	0.1316
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.4000	0.0000	0.2222	0.0714	0.1594	0.1349	0.1240	0.1705	0.2195	0.4000	0.1565

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.8294	0.0000	0.4938	0.1668	0.2458	0.1946	0.1809	0.2490	0.3091	0.7036	0.1867
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.4000	0.0000	0.2222	0.0714	0.1594	0.1349	0.1240	0.1705	0.2195	0.4000	0.1565
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0730	0.0753	0.0671	0.0919	0.1299	0.0964	0.1263

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

Average FY91-94 April HS Contracts
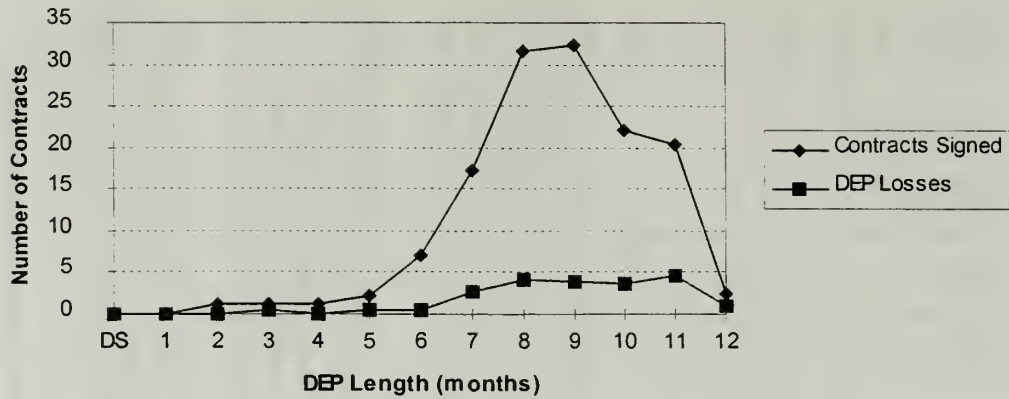
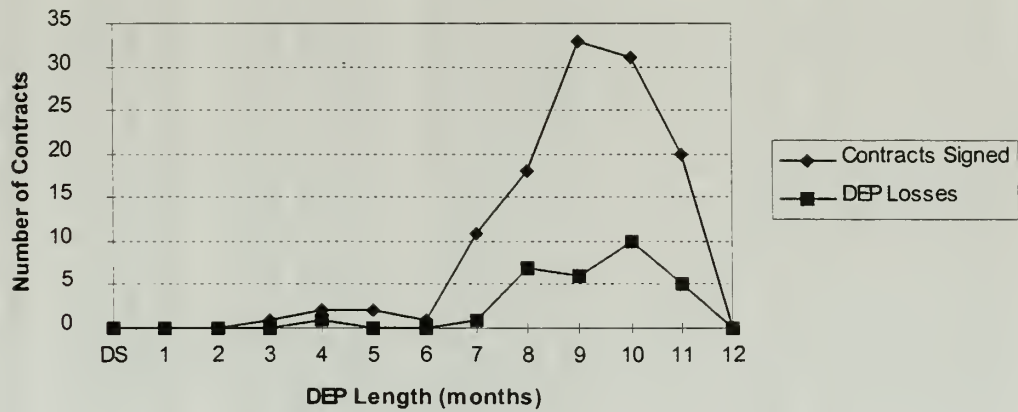## Total FY91-94 April HS Contracts
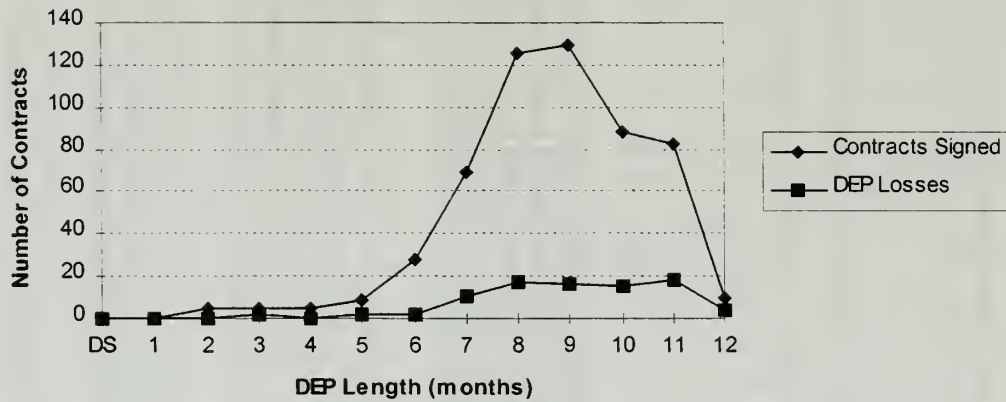
FY91 April HS Contracts
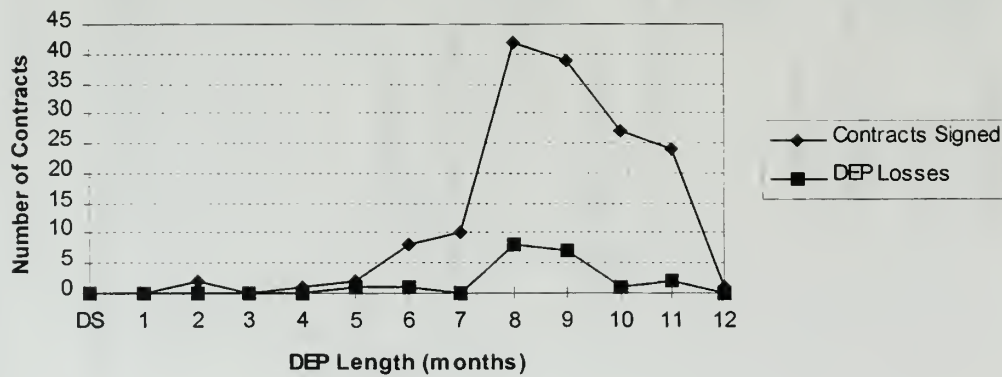
FY92 April HS Contracts
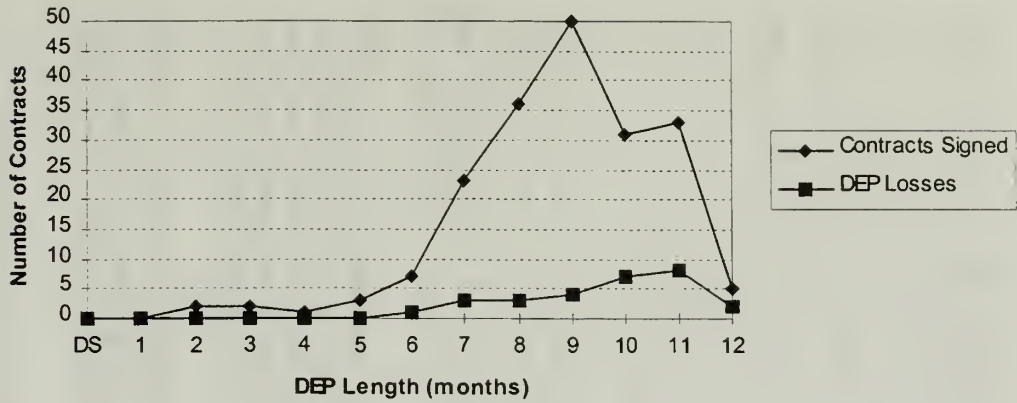
FY93 April HS Contracts
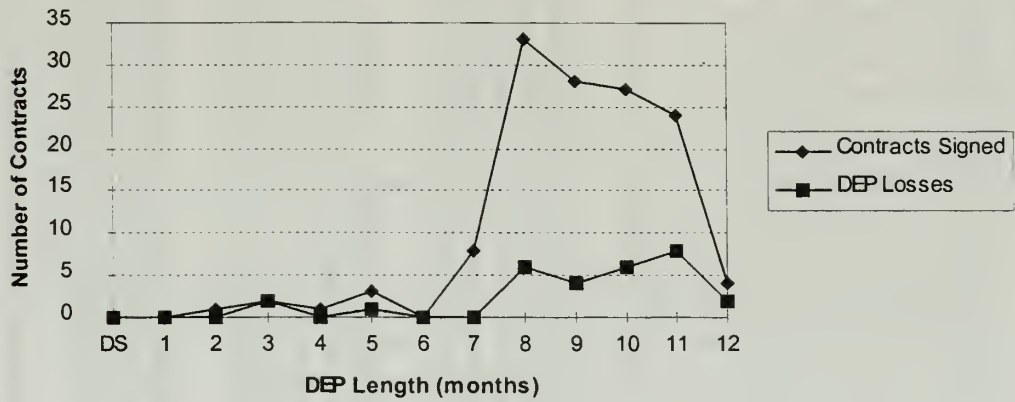
FY94 April HS Contracts

37
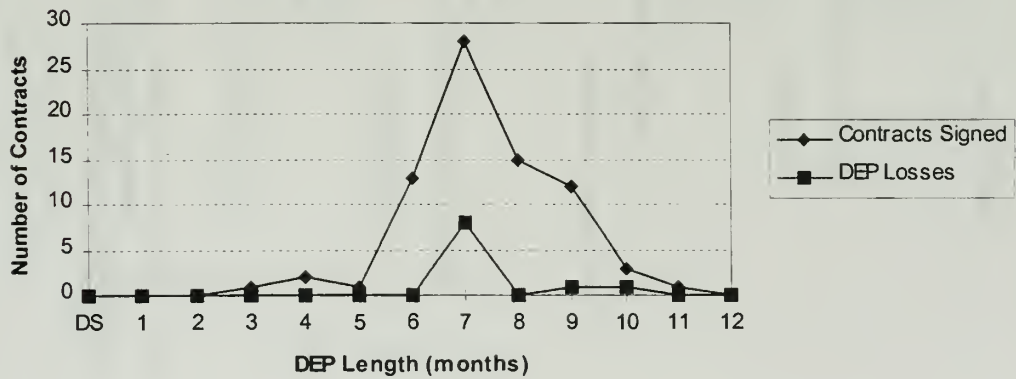
May High School (HS) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	1	1	0	1	5	6	18	30	18	23	6	3	112
FY 92	0	2	2	1	0	3	9	19	21	33	20	13	4	127
FY 93	0	4	3	0	0	3	7	6	28	13	8	7	3	82
FY 94	0	0	0	0	0	5	18	18	10	4	4	0	0	59
Total FY91-94 Contracts	0	7	6	1	1	16	40	61	89	68	55	26	10	380

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	0	0	2	6	6	4	0	1	19
FY 92	0	0	0	0	0	1	2	4	1	3	2	4	0	17
FY 93	0	0	0	0	0	0	1	1	5	2	2	0	1	12
FY 94	0	0	0	0	0	1	1	2	0	0	2	0	0	6
Total DEP Losses	0	0	0	0	0	2	4	9	12	11	10	4	2	54

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0089	0.0089	0.0000	0.0089	0.0446	0.0536	0.1607	0.2679	0.1607	0.2054	0.0536	0.0268	1.0000
FY 92	0.0000	0.0157	0.0157	0.0079	0.0000	0.0236	0.0709	0.1496	0.1654	0.2598	0.1575	0.1024	0.0315	1.0000
FY 93	0.0000	0.0488	0.0366	0.0000	0.0000	0.0366	0.0854	0.0732	0.3415	0.1585	0.0976	0.0854	0.0366	1.0000
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0847	0.3051	0.3051	0.1695	0.0678	0.0678	0.0000	0.0000	1.0000
Average DEP Length Distribution	0.0000	0.0184	0.0158	0.0026	0.0026	0.0421	0.1053	0.1605	0.2342	0.1789	0.1447	0.0684	0.0263	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1111	0.2000	0.3333	0.1739	0.0000	0.3333	0.1696
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.3333	0.2222	0.2105	0.0476	0.0909	0.1000	0.3077	0.0000	0.1339
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1429	0.1667	0.1786	0.1538	0.2500	0.0000	0.3333	0.1463
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.2000	0.0556	0.1111	0.0000	0.0000	0.5000	0.0000	0.0000	0.1017
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250	0.1000	0.1475	0.1348	0.1618	0.1818	0.1538	0.2000	0.1421

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.2871	0.1930	0.2365	0.2058	0.2493	0.2838	0.2925	0.4479	0.1772
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250	0.1000	0.1475	0.1348	0.1618	0.1818	0.1538	0.2000	0.1421
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0070	0.0585	0.0639	0.0742	0.0799	0.0152	0.0000	0.1070

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

Average FY91-94 May HS Contracts
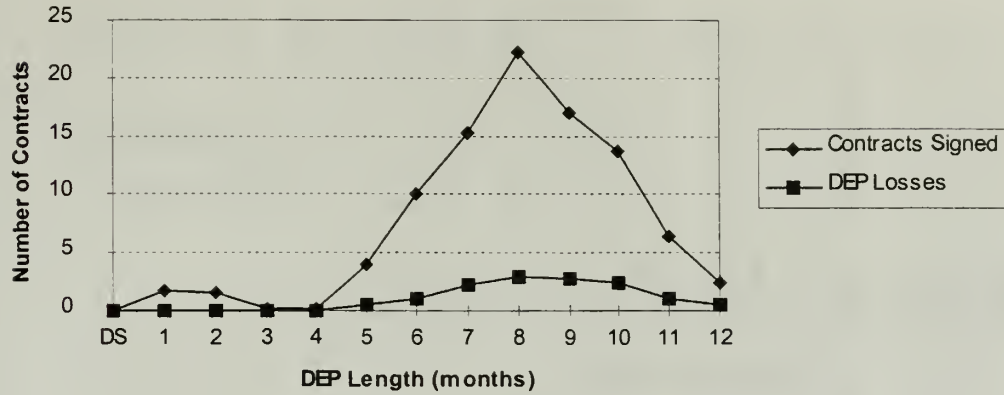

## Total FY91-94 May HS Contracts
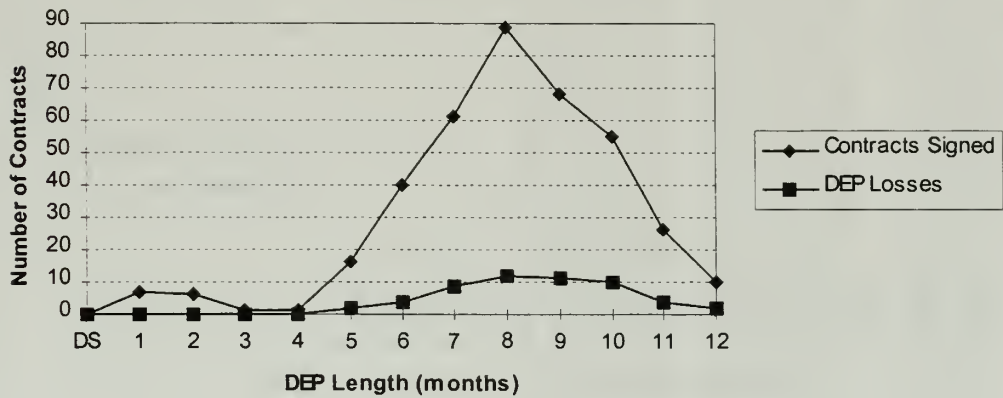
FY91 May HS Contracts

39
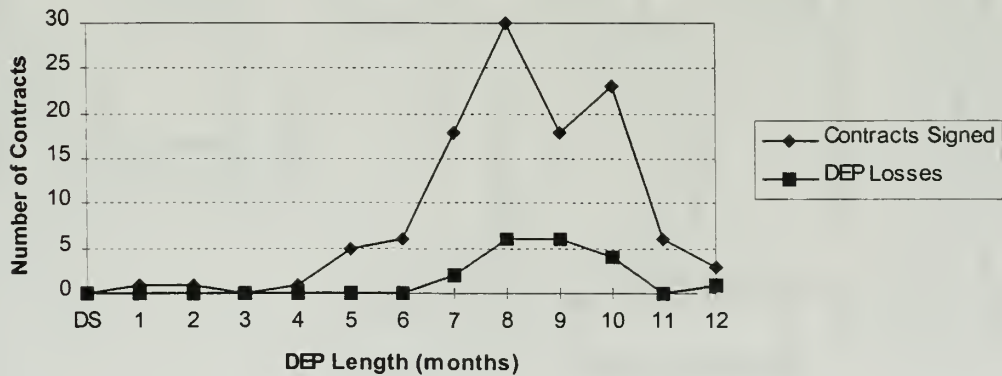
FY92 May HS Contracts
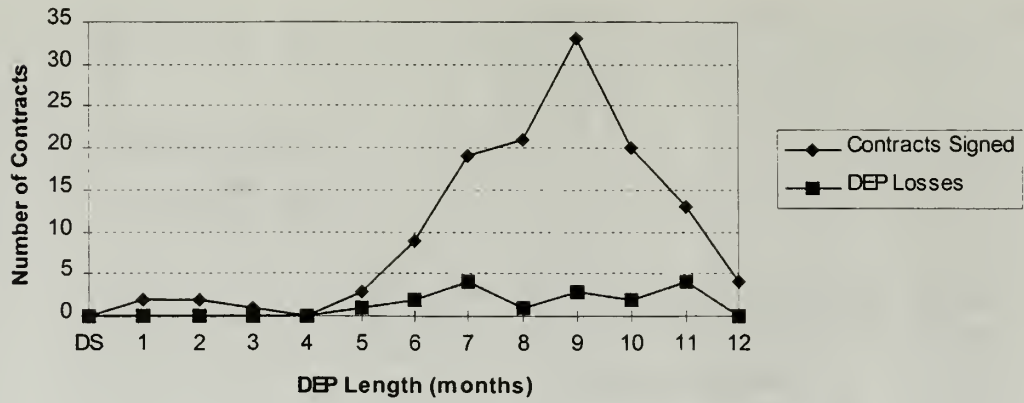
FY93 May HS Contracts
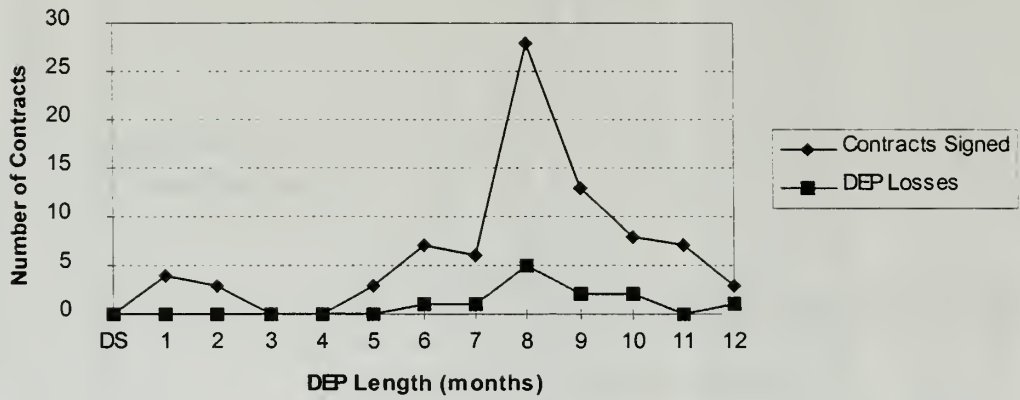
FY94 May HS Contracts

40
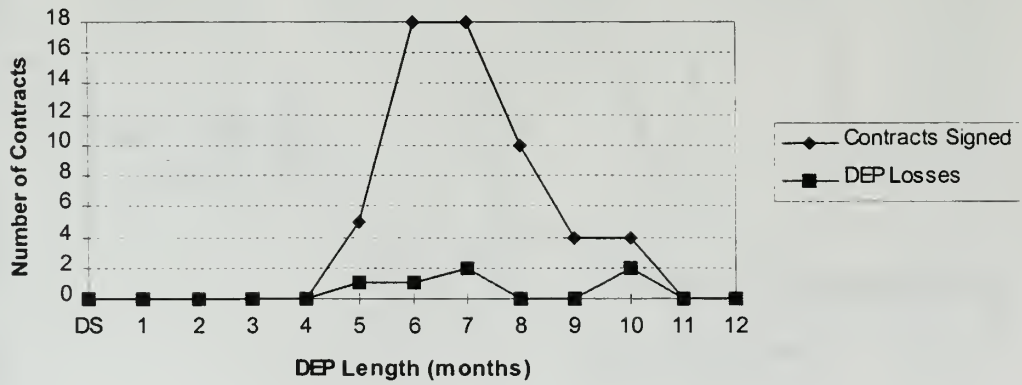
June High School (HS) Contracts

Contracts Signed

DEP Length (months)

Contracts Signed	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	1	0	1	0	2	2	4	1	3	5	77	96
FY 92	0	1	1	0	1	0	2	3	4	13	7	7	66	105
FY 93	0	0	0	0	0	0	1	8	2	3	1	4	68	87
FY 94	0	0	0	0	0	1	1	0	0	1	0	0	33	36
Total FY91-94 Contracts	0	1	2	0	2	1	6	13	10	18	11	16	244	324

DEP Losses	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	0	0	1	0	0	0	1	21	23
FY 92	0	0	0	0	0	0	1	0	0	2	0	2	15	20
FY 93	0	0	0	0	0	0	0	0	0	0	0	0	21	21
FY 94	0	0	0	0	0	0	0	0	0	0	0	0	8	8
Total DEP Losses	0	0	0	0	0	0	1	1	0	2	0	3	65	72

DEP Length Distribution	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0104	0.0000	0.0104	0.0000	0.0208	0.0208	0.0417	0.0104	0.0313	0.0521	0.8021	1.0000
FY 92	0.0000	0.0095	0.0095	0.0000	0.0095	0.0000	0.0190	0.0286	0.0381	0.1238	0.0667	0.0667	0.6286	1.0000
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0115	0.0920	0.0230	0.0345	0.0115	0.0460	0.7816	1.0000
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0278	0.0278	0.0000	0.0000	0.0278	0.0000	0.0000	0.9167	1.0000
Average DEP Length Distribution	0.0000	0.0031	0.0062	0.0000	0.0062	0.0031	0.0185	0.0401	0.0309	0.0556	0.0340	0.0494	0.7531	1.0000

Prob[DEP Loss]	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5000	0.0000	0.0000	0.0000	0.2000	0.2727	0.2396
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5000	0.0000	0.0000	0.1538	0.0000	0.2857	0.2273	0.1905
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3088	0.2414
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2424	0.2222
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1667	0.0769	0.0000	0.1111	0.0000	0.1875	0.2664	0.2222

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4649	0.2218	0.0000	0.2563	0.0000	0.3788	0.3219	0.2675
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1667	0.0769	0.0000	0.1111	0.0000	0.1875	0.2664	0.2222
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2109	0.1770

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

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## Average FY91-94 June HS Contracts
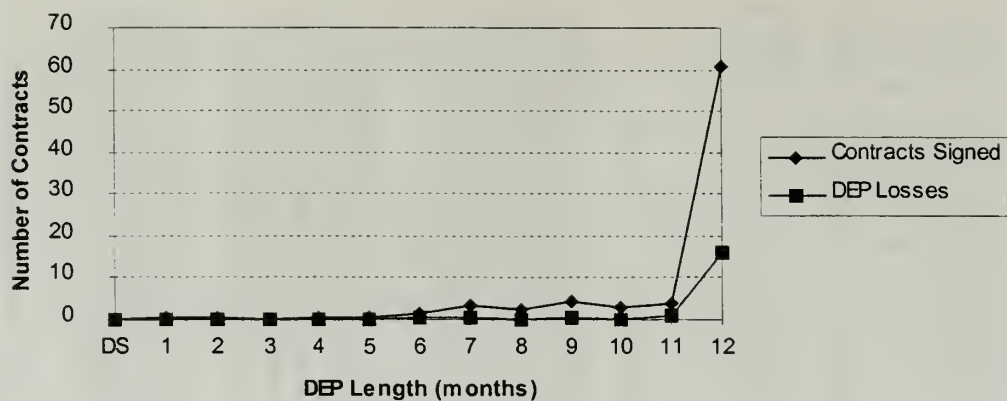
Total FY91-94 June HS Contracts
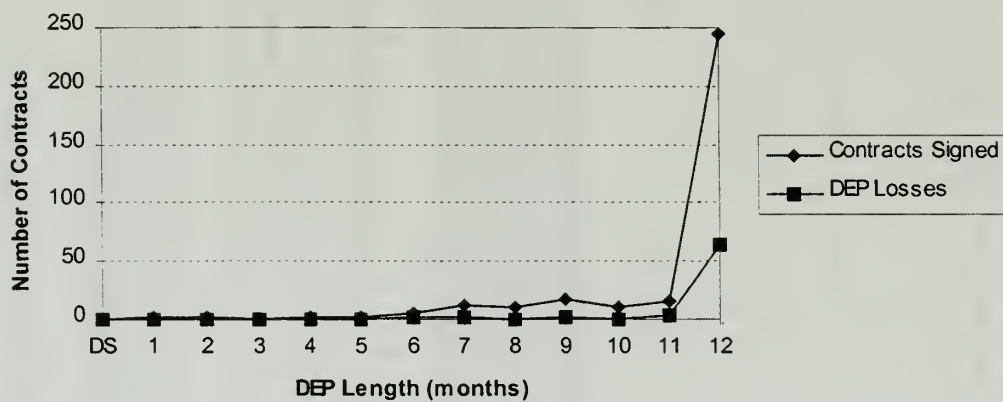
FY91 June HS Contracts
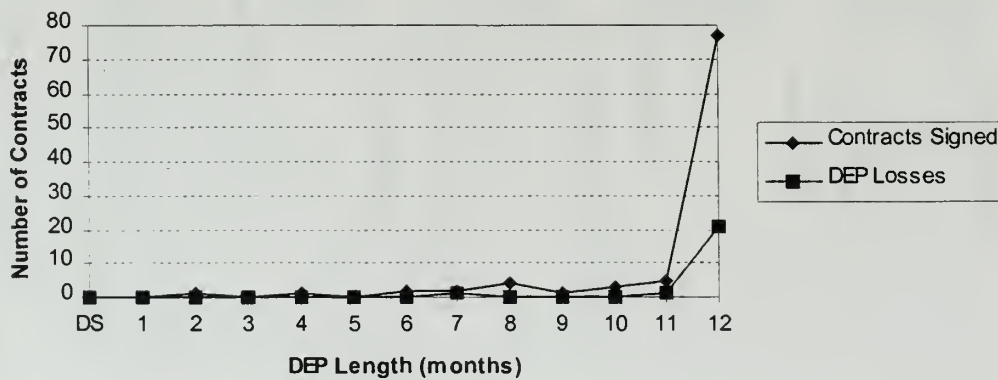
FY92 June HS Contracts
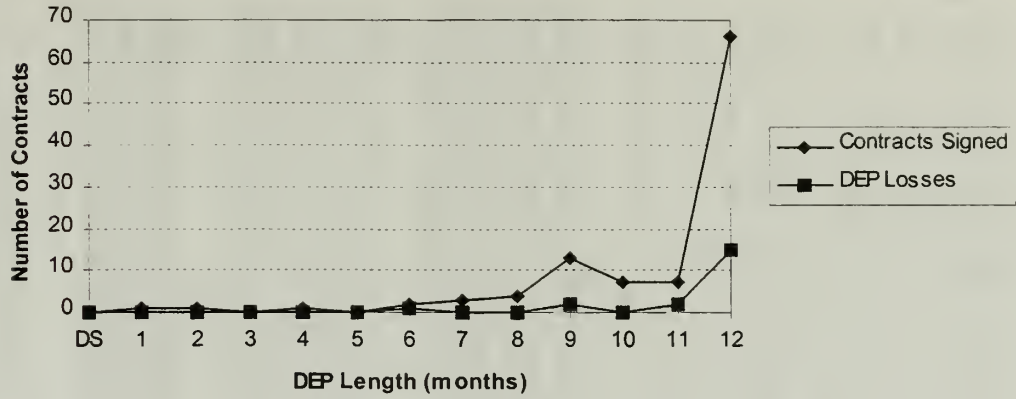
FY93 June HS Contracts
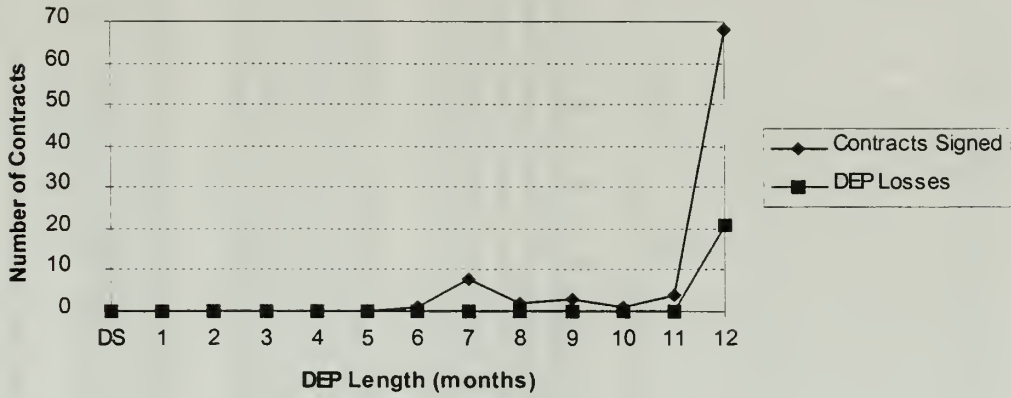
FY94 June HS Contracts

43
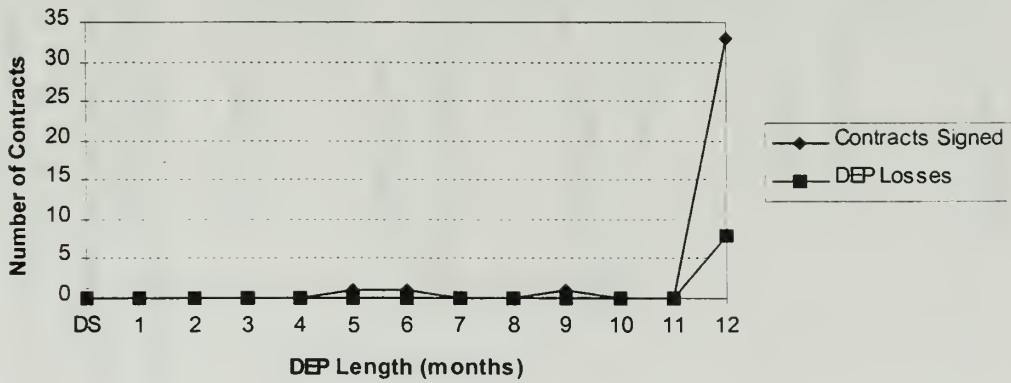
July High School (HS) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	0	0	0	1	1	5	65	57	129
FY 92	0	0	0	0	1	1	0	0	3	2	2	89	47	145
FY 93	0	0	0	0	0	0	1	0	1	1	3	33	63	102
FY 94	0	0	0	0	0	0	0	0	0	0	0	26	33	59
Total FY91-94 Contracts	0	0	0	0	1	1	1	0	5	4	10	213	200	435

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	0	0	0	0	0	3	15	14	32
FY 92	0	0	0	0	0	0	0	0	0	0	0	27	9	36
FY 93	0	0	0	0	0	0	1	0	0	1	0	5	14	21
FY 94	0	0	0	0	0	0	0	0	0	0	0	7	12	19
Total DEP Losses	0	0	0	0	0	0	1	0	0	1	3	54	49	108

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0078	0.0078	0.0388	0.5039	0.4419	1.0000
FY 92	0.0000	0.0000	0.0000	0.0000	0.0069	0.0069	0.0000	0.0000	0.0207	0.0138	0.0138	0.6138	0.3241	1.0000
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0098	0.0000	0.0098	0.0098	0.0294	0.3235	0.6176	1.0000
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4407	0.5593	1.0000
Average DEP Length Distribution	0.0000	0.0000	0.0000	0.0000	0.0023	0.0023	0.0023	0.0000	0.0115	0.0092	0.0230	0.4897	0.4598	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6000	0.2308	0.2456	0.2481
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3034	0.1915	0.2483
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	1.0000	0.0000	0.1515	0.2222	0.2059
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2692	0.3636	0.3220
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000	0.0000	0.0000	0.2500	0.3000	0.2535	0.2450	0.2483

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000	0.0000	0.0000	0.6744	0.5840	0.3119	0.3046	0.2889
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000	0.0000	0.0000	0.2500	0.3000	0.2535	0.2450	0.2483
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000	0.0000	0.0000	0.0000	0.0160	0.1951	0.1854	0.2077

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

Average FY91-94 July HS Contracts
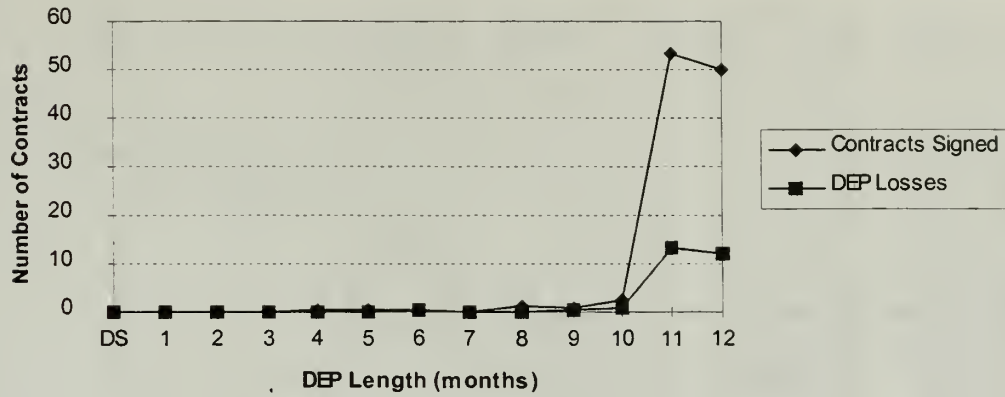

Total FY91-94 July HS Contracts
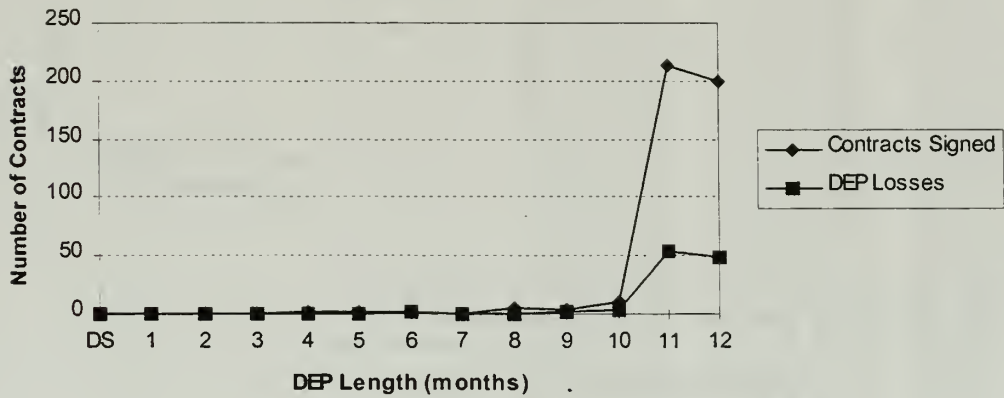
FY91 July HS Contracts

45
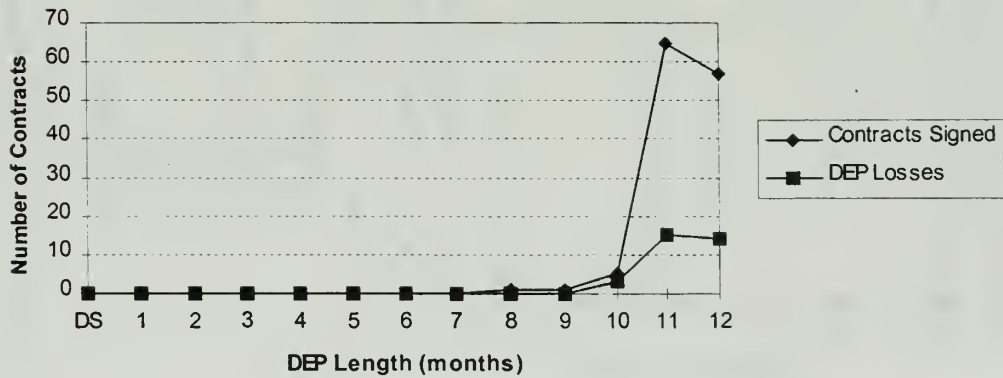
FY92 July HS Contracts
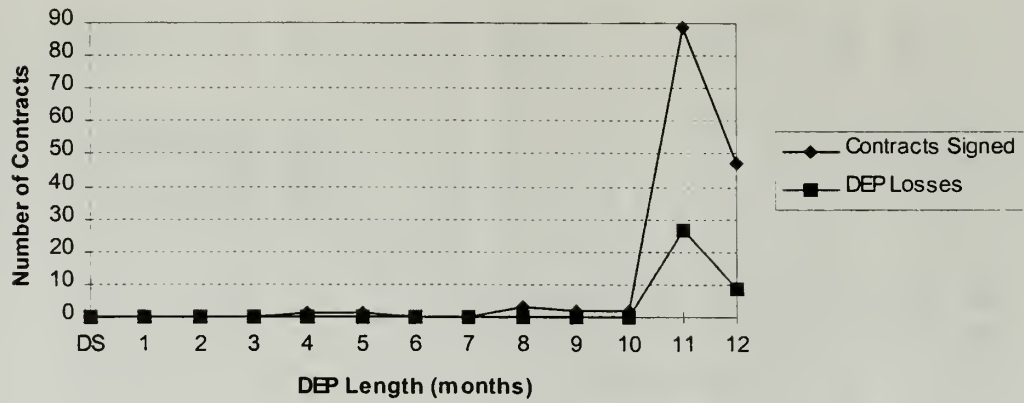
FY93 July HS Contracts
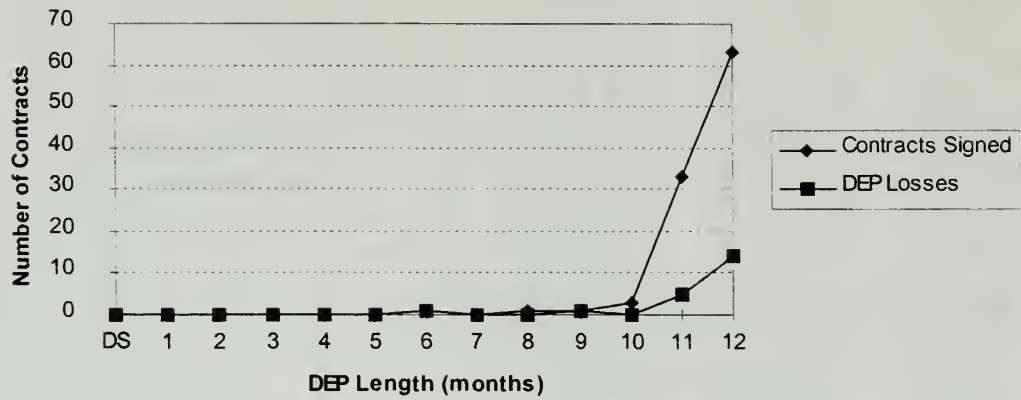
FY94 July HS Contracts

46
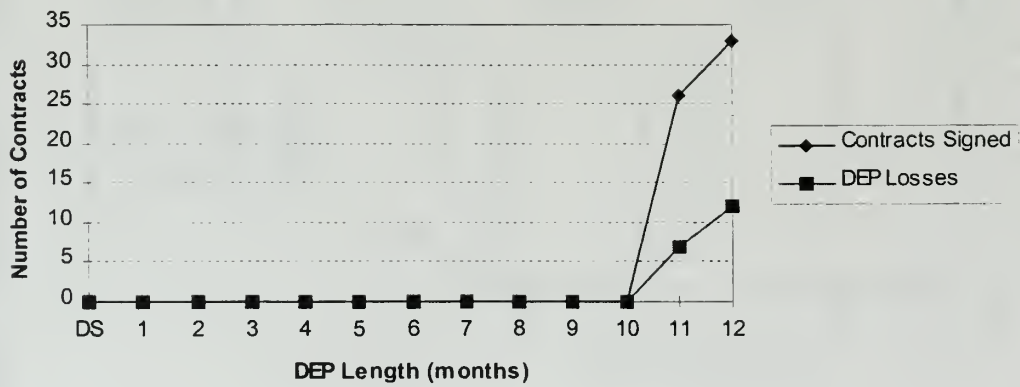
August High School (HS) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	0	0	1	1	5	23	91	10	131
FY 92	0	0	0	0	0	0	0	1	1	1	30	95	29	156
FY 93	0	0	0	0	0	0	0	0	0	2	17	35	33	87
FY 94	0	0	0	1	0	0	0	1	0	0	11	41	14	68
Total FY91-94 Contracts	0	0	0	1	0	0	0	2	2	8	81	262	86	442

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	0	0	0	0	0	8	23	3	34
FY 92	0	0	0	0	0	0	0	0	1	0	11	31	14	57
FY 93	0	0	0	0	0	0	0	0	0	0	3	11	8	22
FY 94	0	0	0	0	0	0	0	0	1	0	4	12	4	20
Total DEP Losses	0	0	0	0	0	0	0	1	0	0	26	77	29	133

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0076	0.0076	0.0382	0.1756	0.6947	0.0763	1.0000
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0064	0.0064	0.0064	0.1923	0.6090	0.1859	1.0000
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0230	0.1954	0.4023	0.3793	1.0000
FY 94	0.0000	0.0000	0.0000	0.0147	0.0000	0.0000	0.0000	0.0147	0.0000	0.0000	0.1618	0.6029	0.2059	1.0000
Average DEP Length Distribution	0.0000	0.0000	0.0000	0.0023	0.0000	0.0000	0.0000	0.0045	0.0045	0.0181	0.1833	0.5928	0.1946	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3478	0.2527	0.3000	0.2595
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.3667	0.3263	0.4828	0.3654
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1765	0.3143	0.2424	0.2529
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3636	0.2927	0.2857	0.2941
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5000	0.0000	0.0000	0.3210	0.2939	0.3372	0.3009

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.4227	0.3491	0.4371	0.3437
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5000	0.0000	0.0000	0.3210	0.2939	0.3372	0.3009
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2193	0.2387	0.2373	0.2581

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

Average FY91-94 August HS Contracts
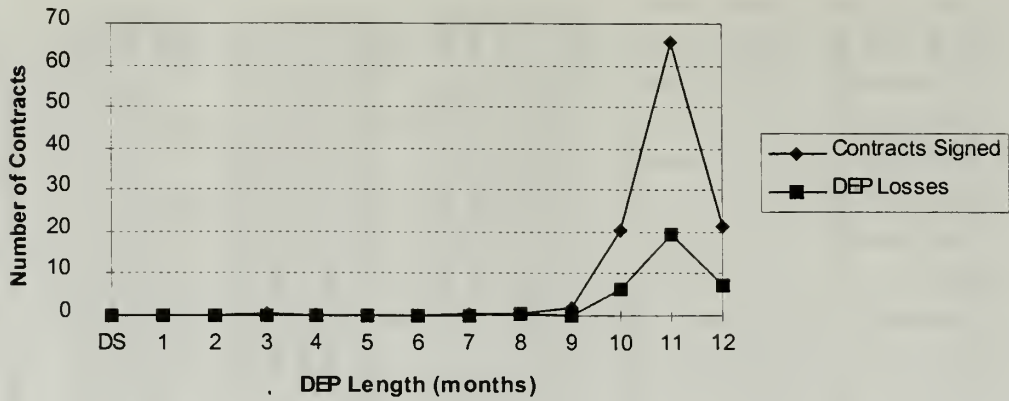

Total FY91-94 August HS Contracts
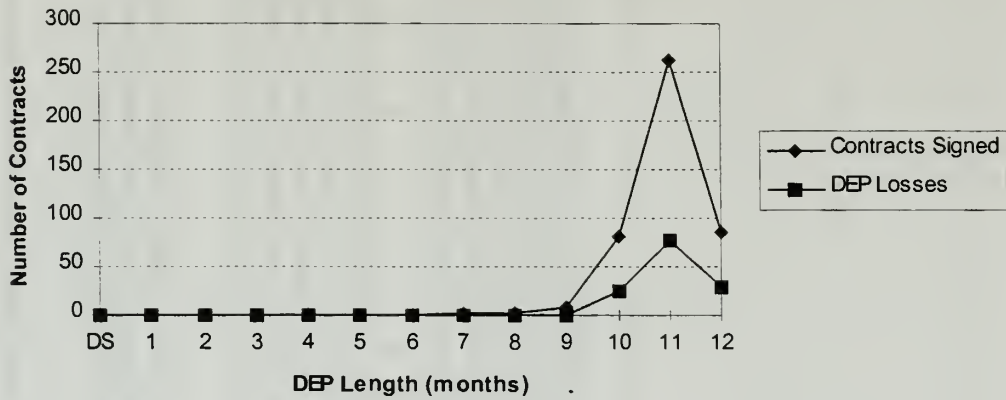
FY91 August HS Contracts

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FY92 August HS Contracts

FY93 August HS Contracts
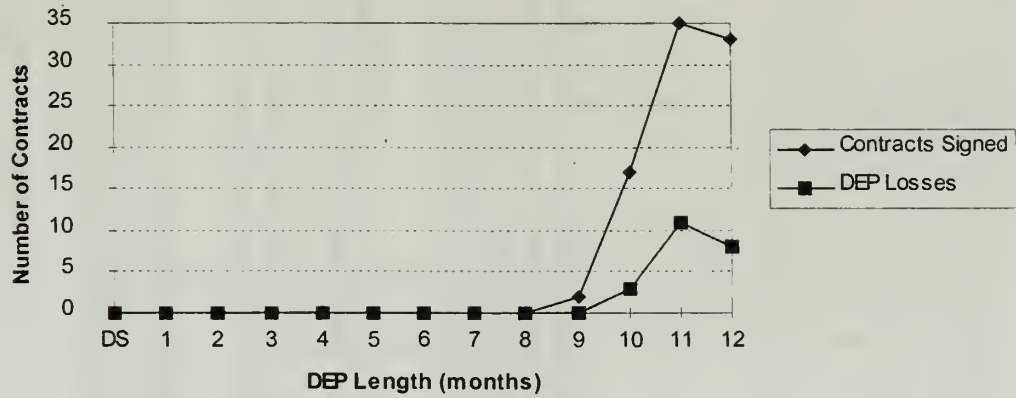
FY94 August HS Contracts

49
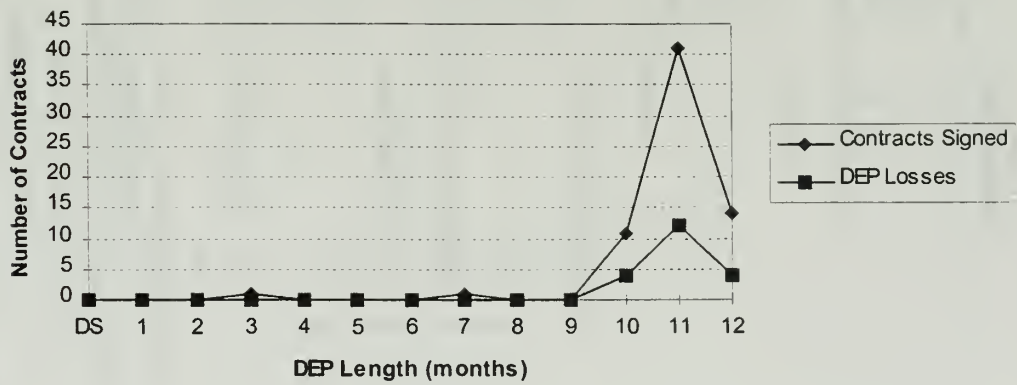
September High School (HS) Contracts

Contracts Signed

DEP Length (months)

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	1	0	0	1	12	55	72	9	150
FY 92	0	0	0	0	0	0	0	1	0	6	49	66	30	152
FY 93	0	0	0	0	0	0	0	2	1	7	27	42	11	90
FY 94	0	0	0	0	0	0	0	0	1	8	32	23	4	68
Total FY91-94 Contracts	0	0	0	0	0	1	0	3	3	33	163	203	54	460

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	0	0	0	0	1	15	13	3	32
FY 92	0	0	0	0	0	0	0	0	0	3	10	20	8	41
FY 93	0	0	0	0	0	0	0	2	0	1	6	11	2	22
FY 94	0	0	0	0	0	0	0	0	0	0	7	5	2	14
Total DEP Losses	0	0	0	0	0	0	0	2	0	5	38	49	15	109

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0067	0.0000	0.0000	0.0067	0.0800	0.3667	0.4800	0.0600	1.0000
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0066	0.0000	0.0395	0.3224	0.4342	0.1974	1.0000
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0222	0.0111	0.0778	0.3000	0.4667	0.1222	1.0000
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0147	0.1176	0.4706	0.3382	0.0588	1.0000
Average DEP Length Distribution	0.0000	0.0000	0.0000	0.0000	0.0000	0.0022	0.0000	0.0065	0.0065	0.0717	0.3543	0.4413	0.1174	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833	0.2727	0.1806	0.3333	0.2133
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5000	0.2041	0.3030	0.2667	0.2697
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.1429	0.2222	0.2619	0.1818	0.2444
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2188	0.2174	0.5000	0.2059
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6667	0.0000	0.1515	0.2331	0.2414	0.2778	0.2370

Confidence Interval

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.2738	0.2980	0.3002	0.3972	0.2758
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6667	0.0000	0.1515	0.2331	0.2414	0.2778	0.2370
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1332	0.0000	0.0292	0.1682	0.1825	0.1583	0.1981

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

## Average FY91-94 September HS Contracts
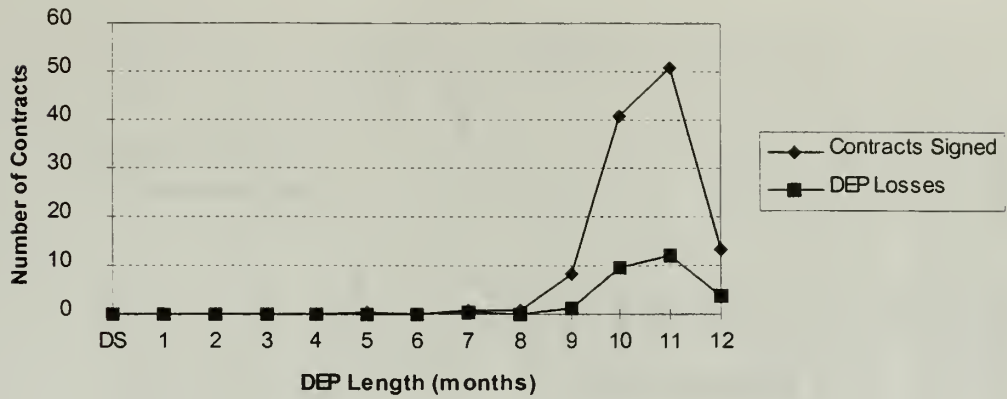

Total FY91-94 September HS Contracts
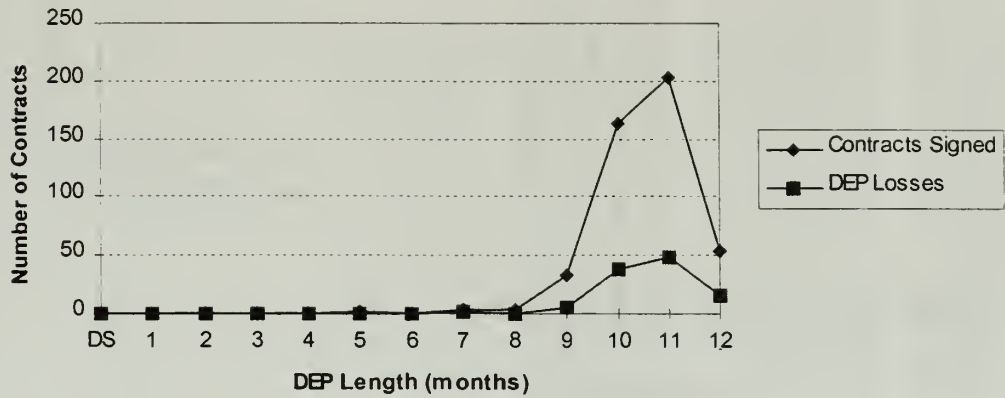
FY91 September HS Contracts
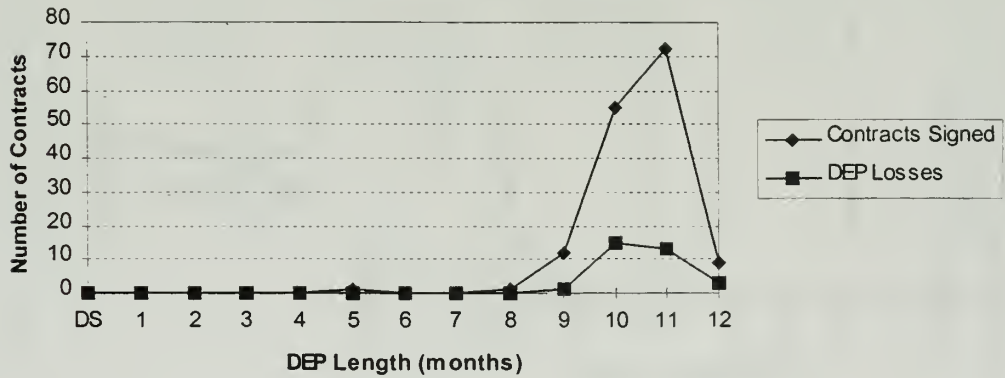
FY92 September HS Contracts
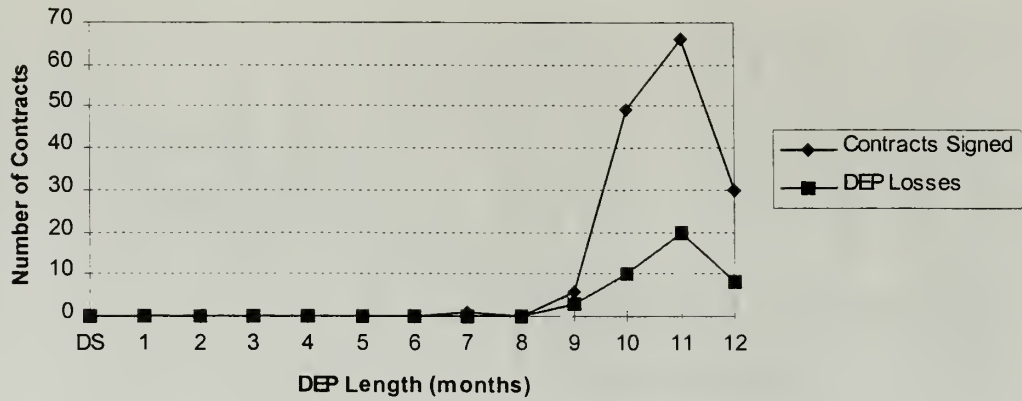
FY93 September HS Contracts
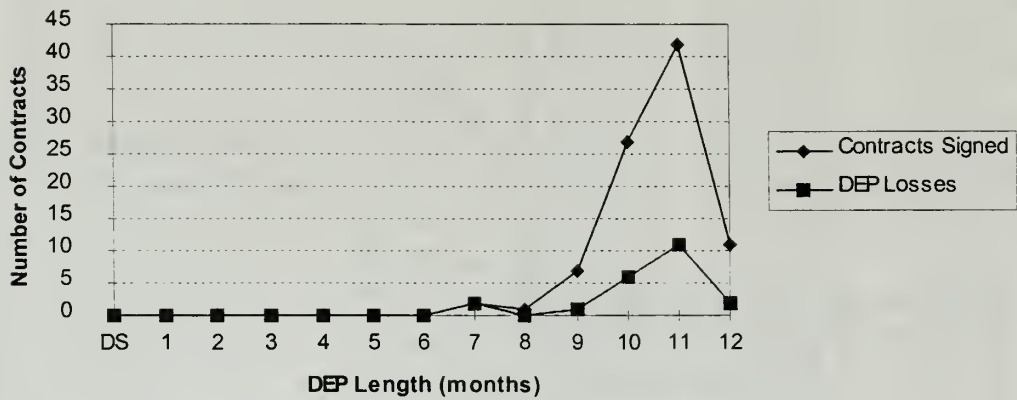
FY94 September HS Contracts
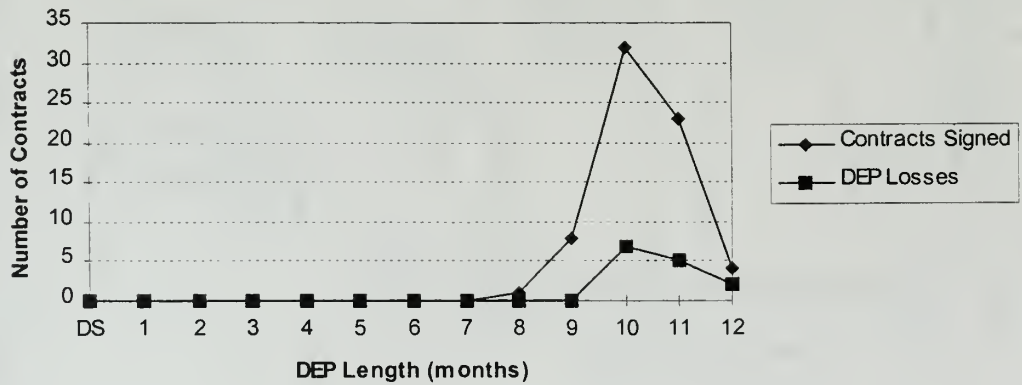
October High School (HS) Contracts

Contracts Signed

DEP Length (months)

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	1	0	2	0	3	0	32	82	43	21	184
FY 92	0	0	0	0	0	0	0	1	6	31	46	55	3	142
FY 93	0	0	0	0	0	0	0	1	2	14	60	35	4	116
FY 94	0	0	0	0	0	0	2	1	7	16	44	12	0	82
Total FY91-94 Contracts	0	0	0	1	0	2	2	6	15	93	232	145	28	524

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	0	0	0	0	6	12	9	5	32
FY 92	0	0	0	0	0	0	0	1	3	6	9	14	2	35
FY 93	0	0	0	0	0	0	0	0	0	2	11	7	0	20
FY 94	0	0	0	0	0	0	0	0	0	3	9	1	0	13
Total DEP Losses	0	0	0	0	0	0	0	1	3	17	41	31	7	100

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0054	0.0000	0.0109	0.0000	0.0163	0.0000	0.1739	0.4457	0.2337	0.1141	1.0000
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0070	0.0423	0.2183	0.3239	0.3873	0.0211	1.0000
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0086	0.0172	0.1207	0.5172	0.3017	0.0345	1.0000
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0244	0.0122	0.0854	0.1951	0.5366	0.1463	0.0000	1.0000
Average DEP Length Distribution	0.0000	0.0000	0.0000	0.0019	0.0000	0.0038	0.0038	0.0115	0.0286	0.1775	0.4427	0.2767	0.0534	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1875	0.1463	0.2093	0.2381	0.1739
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.5000	0.1935	0.1957	0.2545	0.6667	0.2465
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1429	0.1833	0.2000	0.0000	0.1724
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1875	0.2045	0.0833	0.0000	0.1585
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1667	0.2000	0.1828	0.1767	0.2138	0.2500	0.1908

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4649	0.4024	0.2613	0.2258	0.2805	0.4104	0.2245
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1667	0.2000	0.1828	0.1767	0.2138	0.2500	0.1908
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1042	0.1276	0.1471	0.0896	0.1572

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

Average FY91-94 October HS Contracts
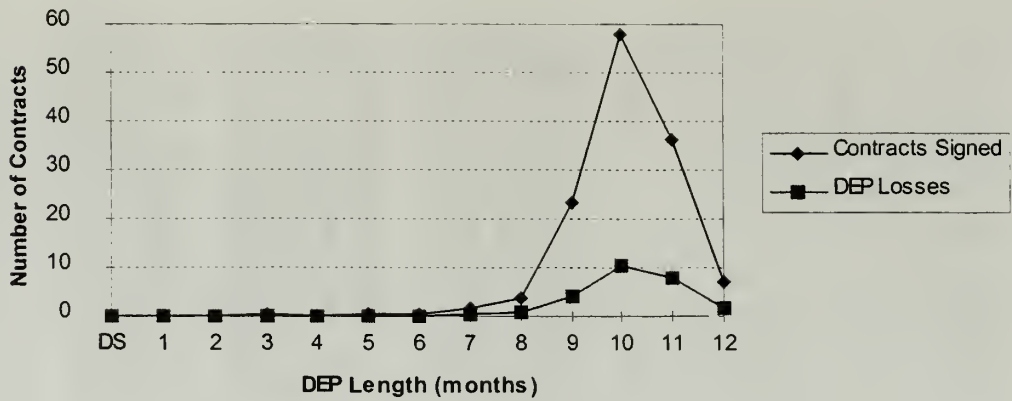
Total FY91-94 October HS Contracts
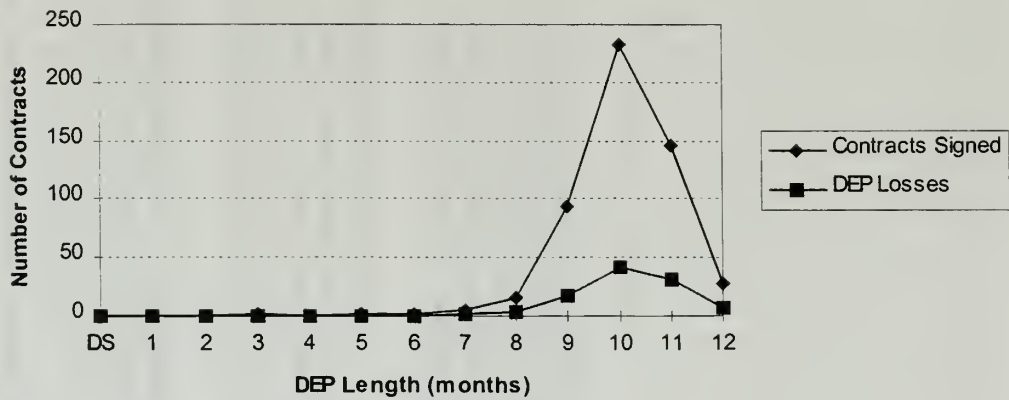
FY91 October HS Contracts

54
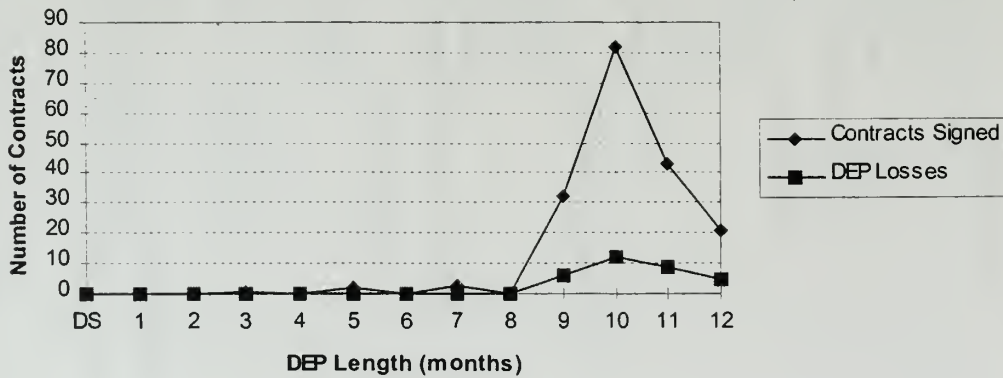
FY92 October HS Contracts
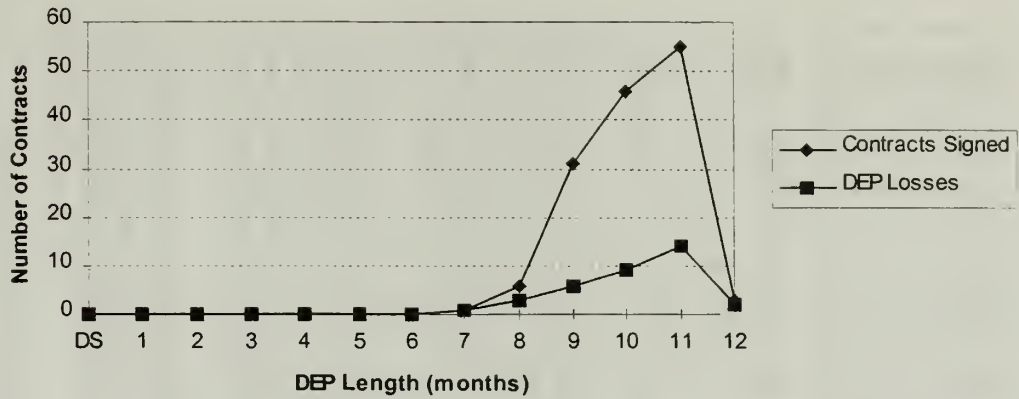
FY93 October HS Contracts
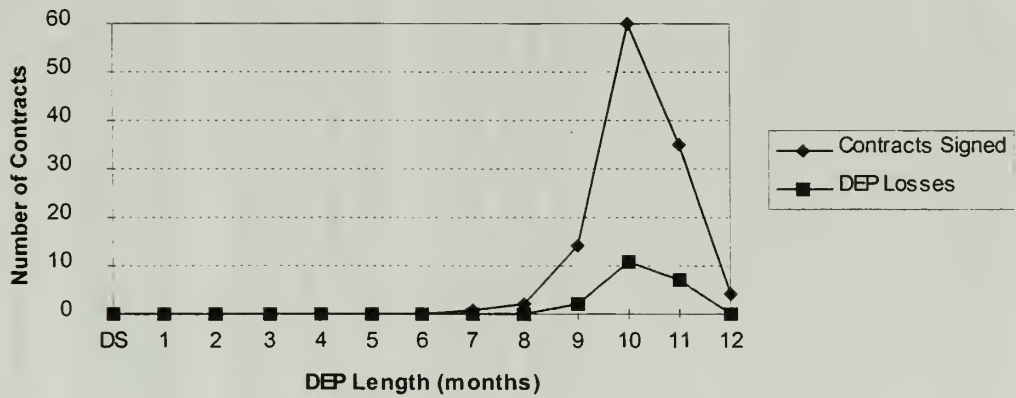
FY94 October HS Contracts

55
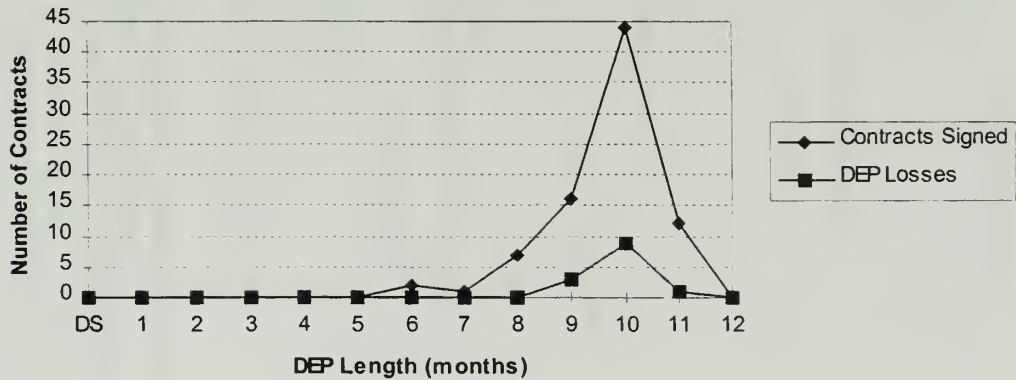
November High School (HS) Contracts

Contracts Signed

DEP Length (months)

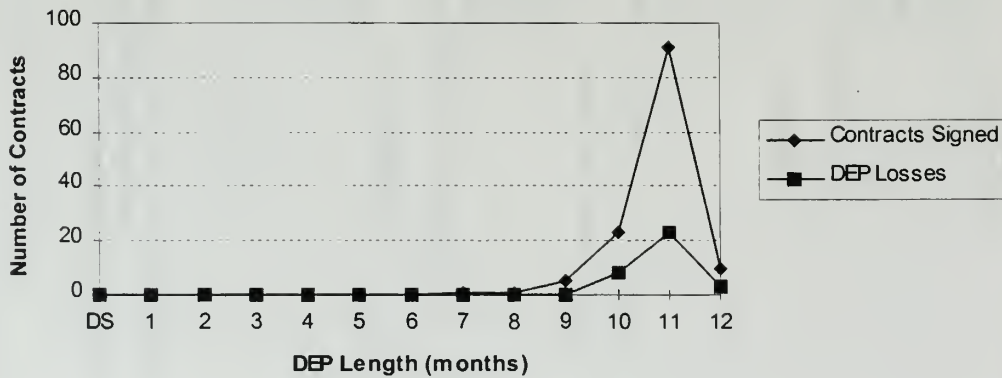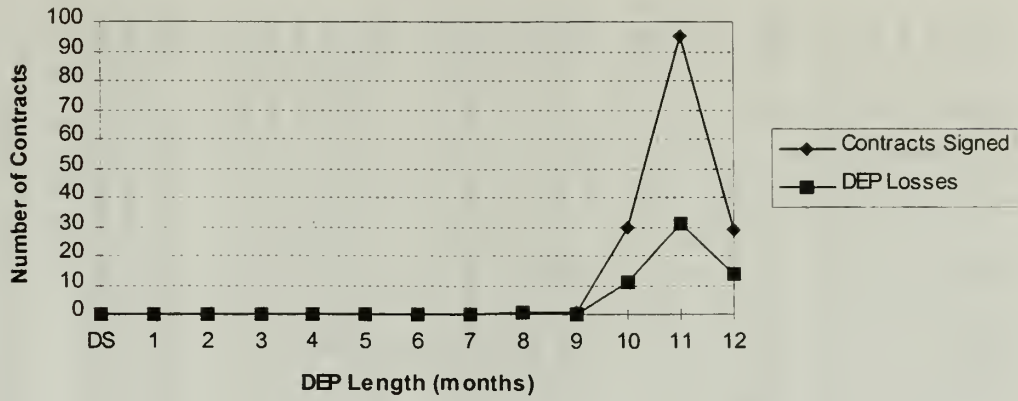|	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	1	1	7	0	9	59	70	31	26	204
FY 92	0	0	0	0	0	0	1	3	10	22	14	5	7	62
FY 93	0	0	0	0	0	0	0	13	13	35	63	11	0	135
FY 94	0	0	0	0	0	0	0	6	17	28	32	0	0	83
Total FY91-94 Contracts	0	0	0	0	1	1	8	22	49	144	179	47	33	484

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	0	0	0	1	9	16	4	10	40
FY 92	0	0	0	0	0	0	1	0	2	5	6	2	3	19
FY 93	0	0	0	0	0	0	0	2	2	9	17	1	0	31
FY 94	0	0	0	0	0	0	0	0	2	7	5	0	0	14
Total DEP Losses	0	0	0	0	0	0	1	2	7	30	44	7	13	104

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0049	0.0049	0.0343	0.0000	0.0441	0.2892	0.3431	0.1520	0.1275	1.0000
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0161	0.0484	0.1613	0.3548	0.2258	0.0806	0.1129	1.0000
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0963	0.0963	0.2593	0.4667	0.0815	0.0000	1.0000
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0723	0.2048	0.3373	0.3855	0.0000	0.0000	1.0000
Average DEP Length Distribution	0.0000	0.0000	0.0000	0.0000	0.0021	0.0021	0.0165	0.0455	0.1012	0.2975	0.3698	0.0971	0.0682	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1111	0.1525	0.2286	0.1290	0.3846	0.1961
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.2000	0.2273	0.4286	0.4000	0.4286	0.3065
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1538	0.1538	0.2571	0.2698	0.0909	0.0000	0.2296
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1176	0.2500	0.1563	0.0000	0.0000	0.1687
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250	0.0909	0.1429	0.2083	0.2458	0.1489	0.3939	0.2149

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3542	0.2110	0.2408	0.2747	0.3089	0.2507	0.5607	0.2515
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250	0.0909	0.1429	0.2083	0.2458	0.1489	0.3939	0.2149
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0449	0.1420	0.1827	0.0472	0.2272	0.1783

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

## Average FY91-94 November HS Contracts

Total FY91-94 November HS Contracts

FY91 November HS Contracts
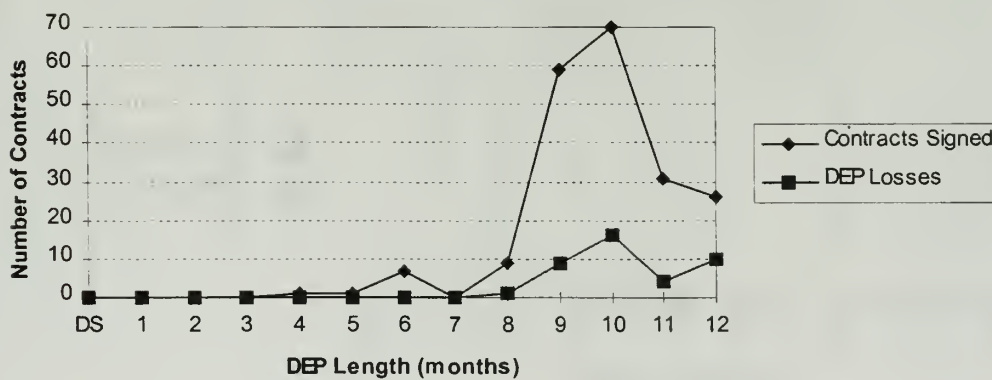
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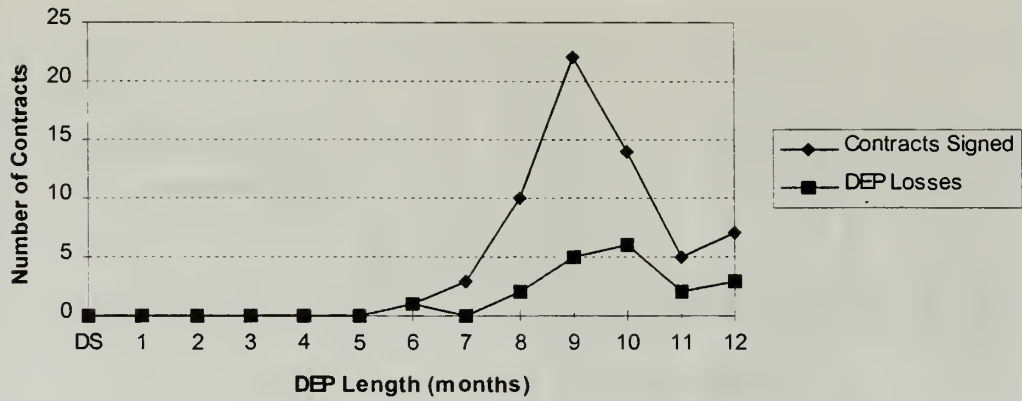
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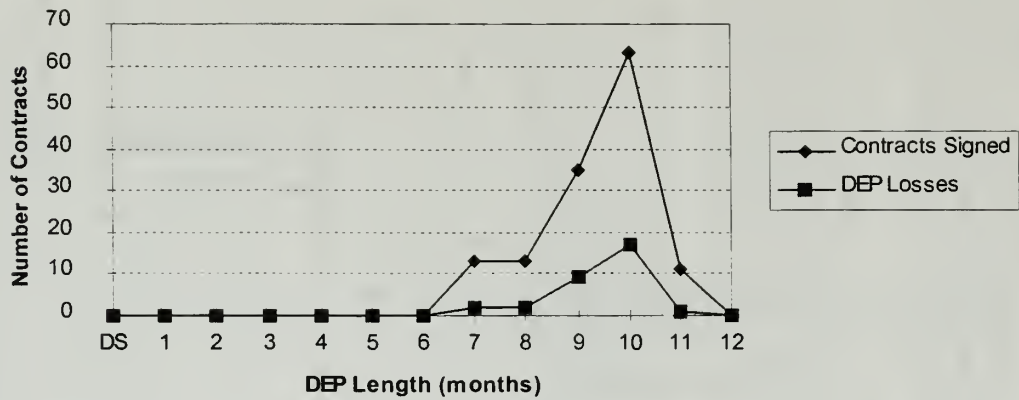
FY94 November HS Contracts
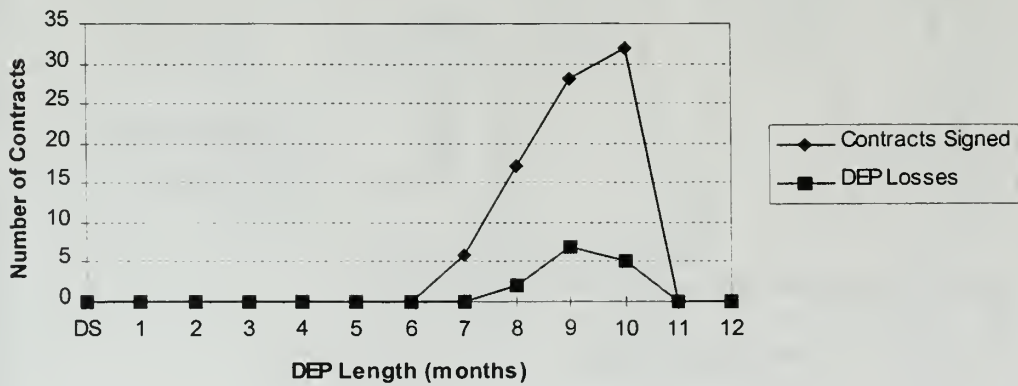
December High School (HS) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	3	0	3	16	52	24	35	16	149
FY 92	0	0	0	0	0	3	17	12	41	70	42	16	3	204
FY 93	0	0	0	0	0	1	10	14	15	46	37	26	0	149
FY 94	0	0	0	0	0	0	11	8	22	55	4	0	0	100
Total FY91-94 Contracts	0	0	0	0	0	7	38	37	94	223	107	77	19	602

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	0	0	0	1	9	7	10	5	32
FY 92	0	0	0	0	0	1	1	1	13	13	8	2	2	41
FY 93	0	0	0	0	0	0	4	1	4	10	10	5	0	34
FY 94	0	0	0	0	0	0	5	1	8	11	1	0	0	26
Total DEP Losses	0	0	0	0	0	1	10	3	26	43	26	17	7	133

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0201	0.0000	0.0201	0.1074	0.3490	0.1611	0.2349	0.1074	1.0000
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.0147	0.0833	0.0588	0.2010	0.3431	0.2059	0.0784	0.0147	1.0000
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0067	0.0671	0.0940	0.1007	0.3087	0.2483	0.1745	0.0000	1.0000
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1100	0.0800	0.2200	0.5500	0.0400	0.0000	0.0000	1.0000
Average DEP Length Distribution	0.0000	0.0000	0.0000	0.0000	0.0000	0.0116	0.0631	0.0615	0.1561	0.3704	0.1777	0.1279	0.0316	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0625	0.1731	0.2917	0.2857	0.3125	0.2148
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.3333	0.0588	0.0833	0.3171	0.1857	0.1905	0.1250	0.6667	0.2010
FY 93	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4000	0.0714	0.2667	0.2174	0.2703	0.1923	0.0000	0.2282
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4545	0.1250	0.3636	0.2000	0.2500	0.0000	0.0000	0.2600
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.1429	0.2632	0.0811	0.2766	0.1928	0.2430	0.2208	0.3684	0.2209

95% CI

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.4021	0.4032	0.1690	0.3670	0.2446	0.3243	0.3134	0.5853	0.2541
Average Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.1429	0.2632	0.0811	0.2766	0.1928	0.2430	0.2208	0.3684	0.2209
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1231	0.0000	0.1862	0.1410	0.1617	0.1281	0.1515	0.1878

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

Average FY91-94 December HS Contracts
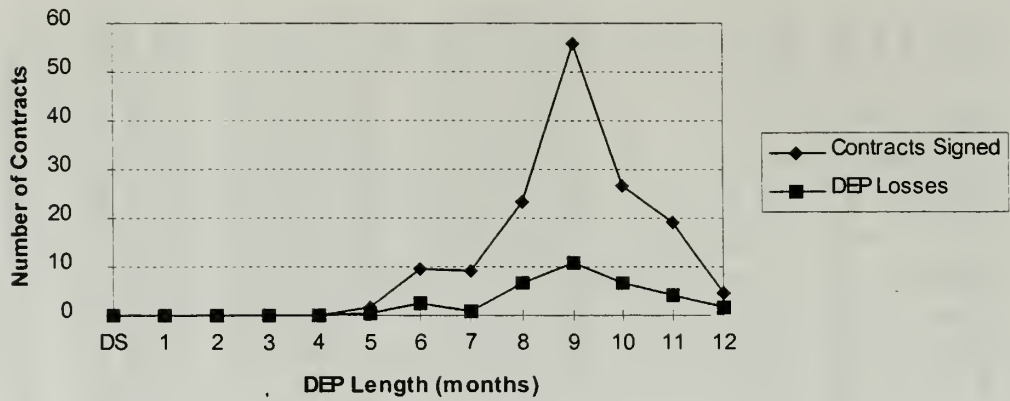

## Total FY91-94 December HS Contracts
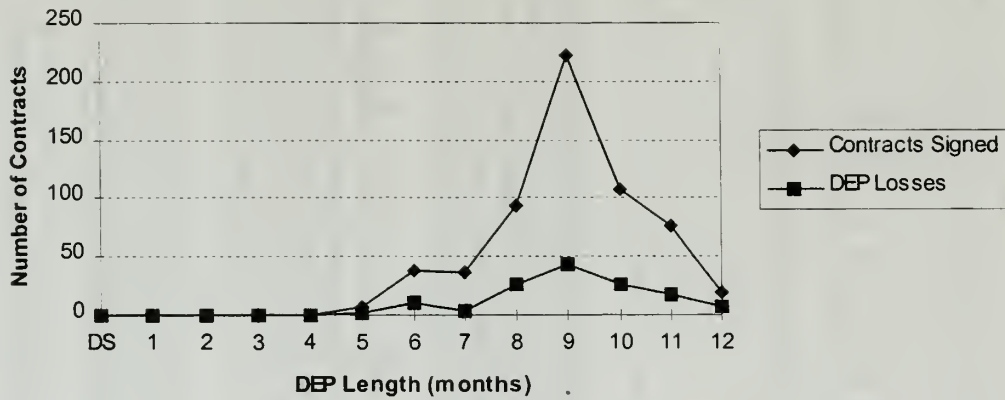
FY91 December HS Contracts

60
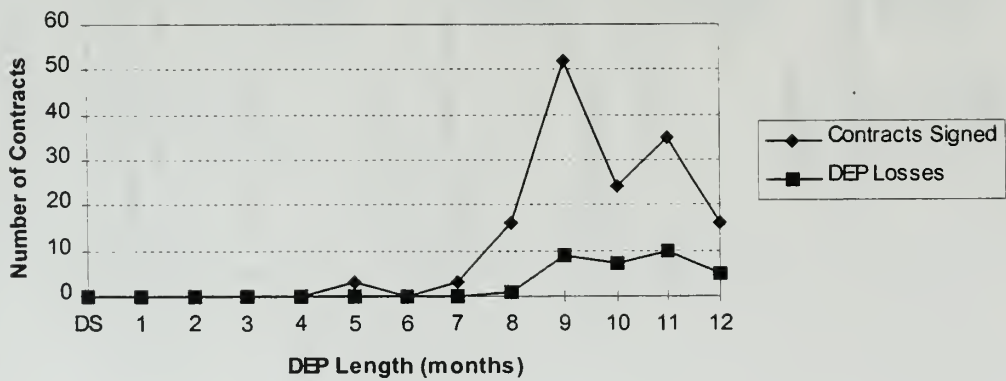
FY92 December HS Contracts
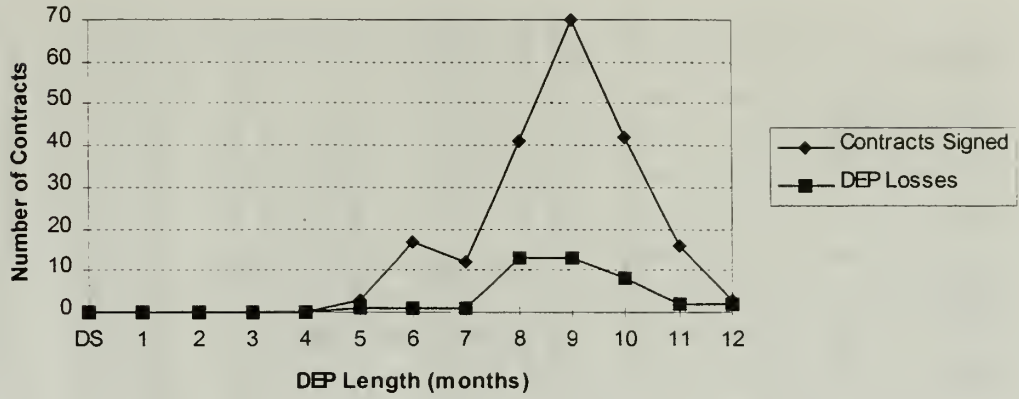
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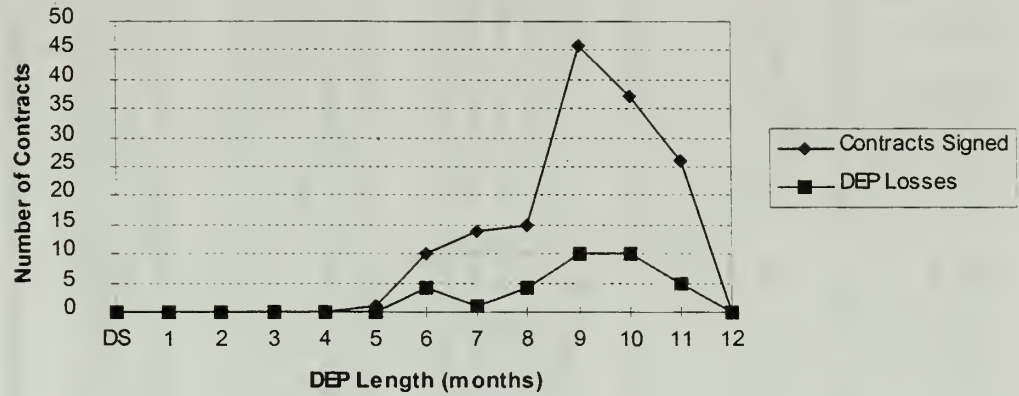
FY94 December HS Contracts
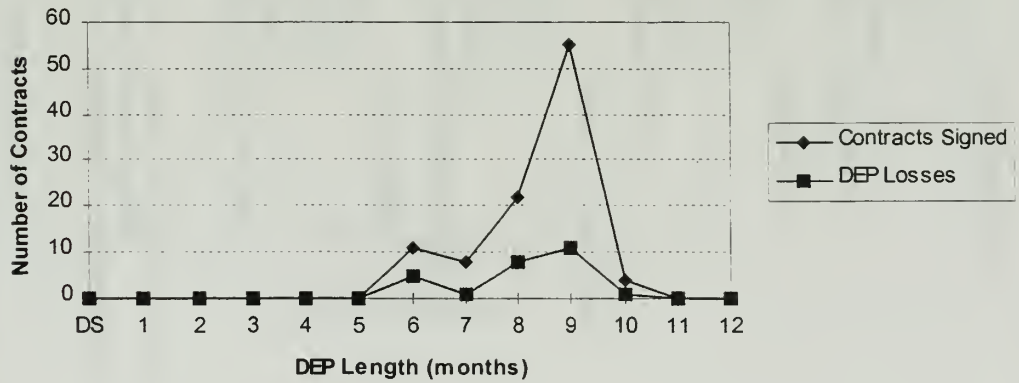
January Work Force (WF) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	4	11	46	13	2	5	21	35	9	33	50	9	238
FY 92	7	12	10	58	74	10	14	15	11	17	4	12	8	252
FY 93	9	10	15	17	18	3	2	4	9	7	28	10	3	135
FY 94	3	10	6	13	23	3	1	3	3	7	5	1	0	78
Total FY91-94 Contracts	19	36	42	134	128	18	22	43	58	40	70	73	20	703

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	1	0	3	2	0	0	2	1	3	3	4	2	21
FY 92	0	3	1	6	13	0	1	4	2	5	1	5	0	41
FY 93	0	0	2	2	3	1	0	0	1	1	5	3	1	19
FY 94	0	0	0	0	4	0	0	0	0	1	0	0	0	5
Total DEP Losses	0	4	3	11	22	1	1	6	4	10	9	12	3	86

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0168	0.0462	0.1933	0.0546	0.0084	0.0210	0.0882	0.1471	0.0378	0.1387	0.2101	0.0378	1.0000
FY 92	0.0278	0.0476	0.0397	0.2302	0.2937	0.0397	0.0556	0.0595	0.0437	0.0675	0.0159	0.0476	0.0317	1.0000
FY 93	0.0667	0.0741	0.1111	0.1259	0.1333	0.0222	0.0148	0.0296	0.0667	0.0519	0.2074	0.0741	0.0222	1.0000
FY 94	0.0385	0.1282	0.0769	0.1667	0.2949	0.0385	0.0128	0.0385	0.0385	0.0897	0.0641	0.0128	0.0000	1.0000
Average DEP Length Distribution	0.0270	0.0512	0.0597	0.1906	0.1821	0.0256	0.0313	0.0612	0.0825	0.0569	0.0996	0.1038	0.0284	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.2500	0.0000	0.0652	0.1538	0.0000	0.0000	0.0952	0.0286	0.3333	0.0909	0.0800	0.2222	0.0882
FY 92	0.0000	0.2500	0.1000	0.1034	0.1757	0.0000	0.0714	0.2667	0.1818	0.2941	0.2500	0.4167	0.0000	0.1627
FY 93	0.0000	0.0000	0.1333	0.1176	0.1667	0.3333	0.0000	0.0000	0.1111	0.1429	0.1786	0.3000	0.3333	0.1407
FY 94	0.0000	0.0000	0.0000	0.0000	0.1739	0.0000	0.0000	0.0000	0.0000	0.1429	0.0000	0.0000	0.0000	0.0641
Average Prob[DEP Loss]	0.0000	0.1111	0.0714	0.0821	0.1719	0.0556	0.0455	0.1395	0.0690	0.2500	0.1286	0.1644	0.1500	0.1223

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.2138	0.1493	0.1286	0.2372	0.1614	0.1325	0.2431	0.1342	0.3842	0.2070	0.2494	0.3065	0.1466
Average Prob[DEP Loss]	0.0000	0.1111	0.0714	0.0821	0.1719	0.0556	0.0455	0.1395	0.0690	0.2500	0.1286	0.1644	0.1500	0.1223
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0084	0.0000	0.0356	0.1065	0.0000	0.0000	0.0360	0.0038	0.1158	0.0502	0.0794	0.0000	0.0981

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

## Average FY91-94 January WF Contracts
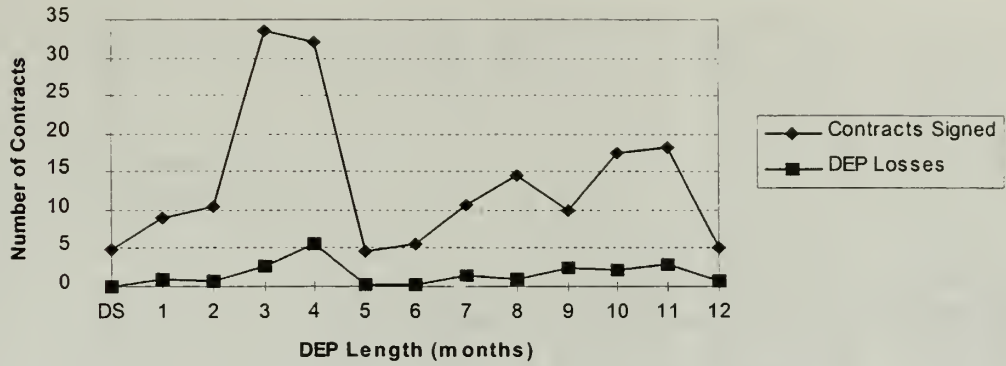
Total FY91-94 January WF Contracts
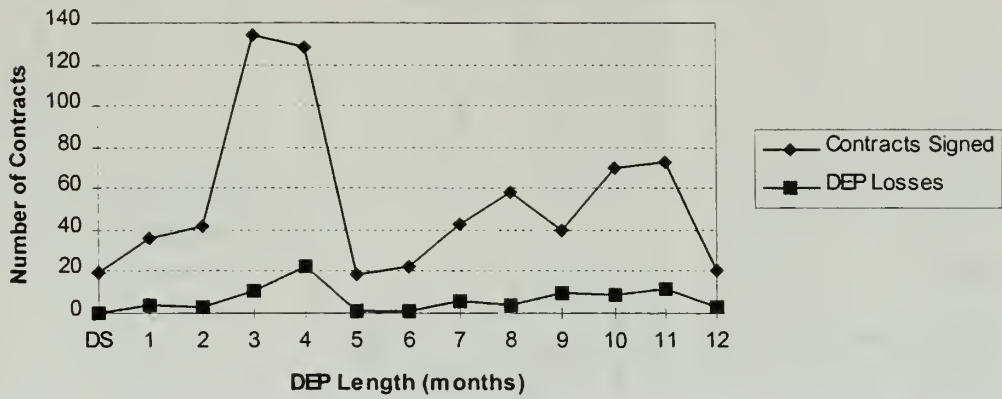
FY91 January WF Contracts
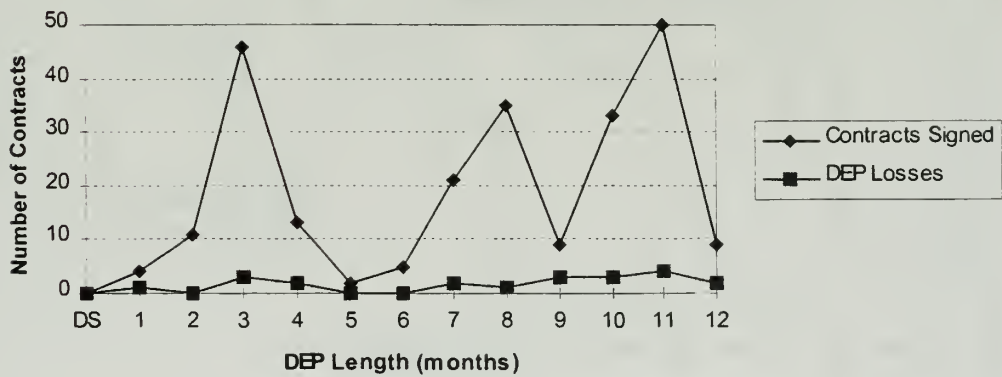
FY92 January WF Contracts
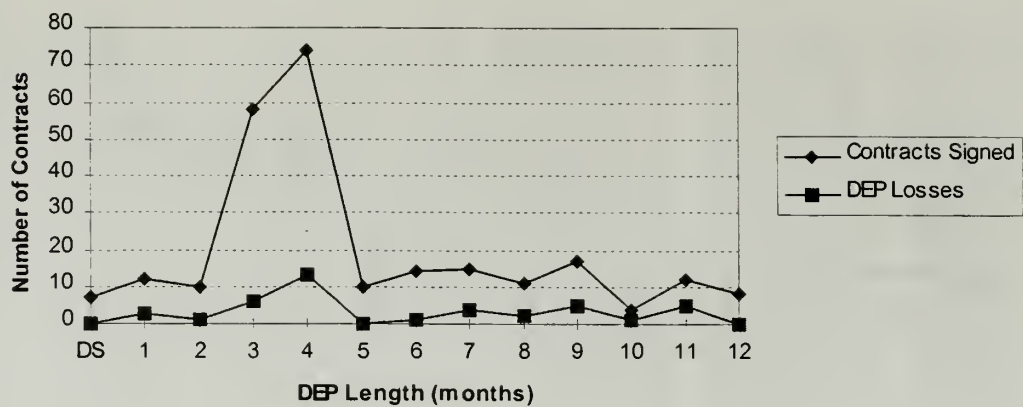
FY93 January WF Contracts
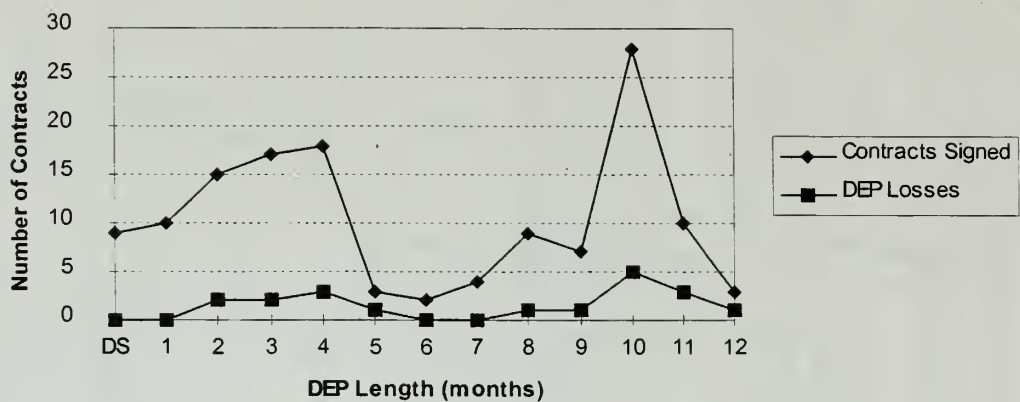
FY94 January WF Contracts
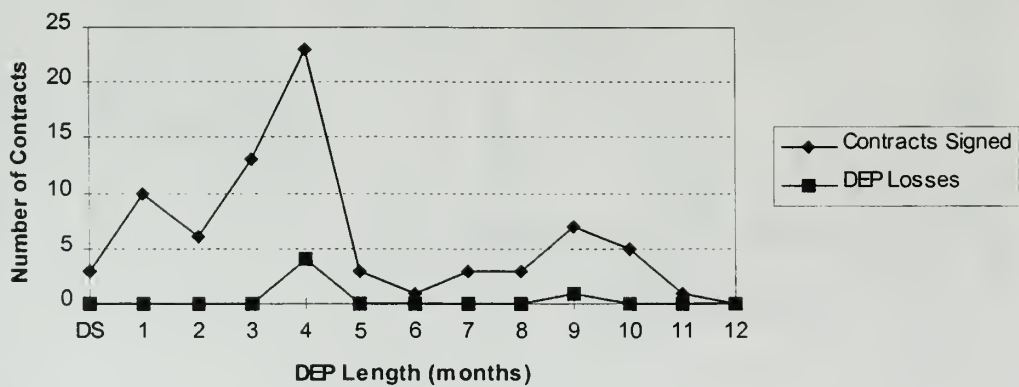
February Work Force (WF) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	12	15	42	3	6	6	21	13	11	43	39	5	216
FY 92	5	6	22	15	12	7	10	6	9	37	27	10	2	168
FY 93	7	6	13	28	3	4	1	1	4	24	22	11	0	124
FY 94	6	5	14	11	4	0	4	7	6	7	2	1	0	67
Total FY91-94 Contracts	18	29	64	96	22	17	21	35	32	79	94	61	7	575

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	1	1	2	1	0	0	3	1	2	5	3	0	19
FY 92	1	1	2	3	1	1	0	1	1	10	6	3	0	30
FY 93	0	1	0	3	0	0	0	0	2	2	3	2	0	13
FY 94	0	0	1	1	1	0	0	0	0	2	1	0	0	6
Total DEP Losses	1	3	4	9	3	1	0	4	4	16	15	8	0	68

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0556	0.0694	0.1944	0.0139	0.0278	0.0278	0.0972	0.0602	0.0509	0.1991	0.1806	0.0231	1.0000
FY 92	0.0298	0.0357	0.1310	0.0893	0.0714	0.0417	0.0595	0.0357	0.0536	0.2202	0.1607	0.0595	0.0119	1.0000
FY 93	0.0565	0.0484	0.1048	0.2258	0.0242	0.0323	0.0081	0.0081	0.0323	0.1935	0.1774	0.0887	0.0000	1.0000
FY 94	0.0896	0.0746	0.2090	0.1642	0.0597	0.0000	0.0597	0.1045	0.0896	0.1045	0.0299	0.0149	0.0000	1.0000
Average DEP Length Distribution	0.0313	0.0504	0.1113	0.1670	0.0383	0.0296	0.0365	0.0609	0.0557	0.1374	0.1635	0.1061	0.0122	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0833	0.0667	0.0476	0.3333	0.0000	0.0000	0.1429	0.0769	0.1818	0.1163	0.0769	0.0000	0.0880
FY 92	0.2000	0.1667	0.0909	0.2000	0.0833	0.1429	0.0000	0.1667	0.1111	0.2703	0.2222	0.3000	0.0000	0.1786
FY 93	0.0000	0.1667	0.0000	0.1071	0.0000	0.0000	0.0000	0.0000	0.5000	0.0833	0.1364	0.1818	0.0000	0.1048
FY 94	0.0000	0.0000	0.0714	0.0909	0.2500	0.0000	0.0000	0.0000	0.0000	0.2857	0.5000	0.0000	0.0000	0.0896
Average Prob[DEP Loss]	0.0556	0.1034	0.0625	0.0938	0.1364	0.0588	0.0000	0.1143	0.1250	0.2025	0.1596	0.1311	0.0000	0.1183

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.1614	0.2143	0.1218	0.1521	0.2798	0.1707	0.0000	0.2197	0.2396	0.2912	0.2336	0.2159	0.0000	0.1447
Average Prob[DEP Loss]	0.0556	0.1034	0.0625	0.0938	0.1364	0.0588	0.0000	0.1143	0.1250	0.2025	0.1596	0.1311	0.0000	0.1183
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0032	0.0354	0.0000	0.0000	0.0000	0.0089	0.0104	0.1139	0.0855	0.0464	0.0000	0.0919

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

# Average FY91-94 February WF Contracts
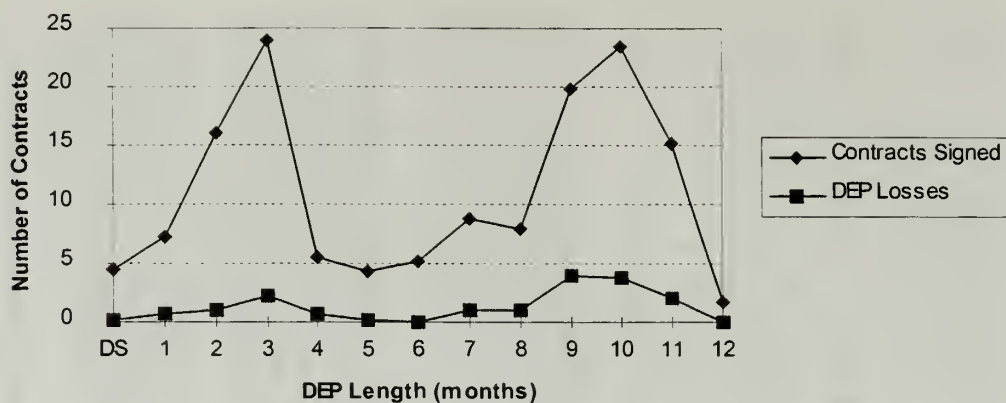

Total FY91-94 February WF Contracts
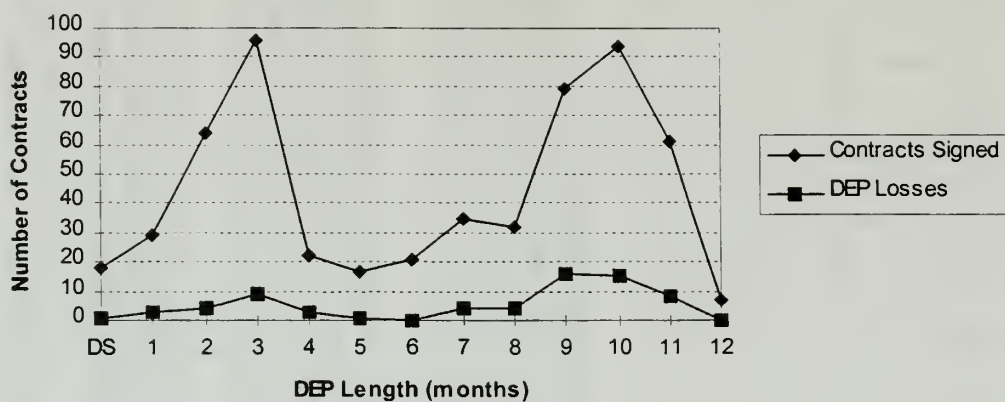
FY91 February WF Contracts

66
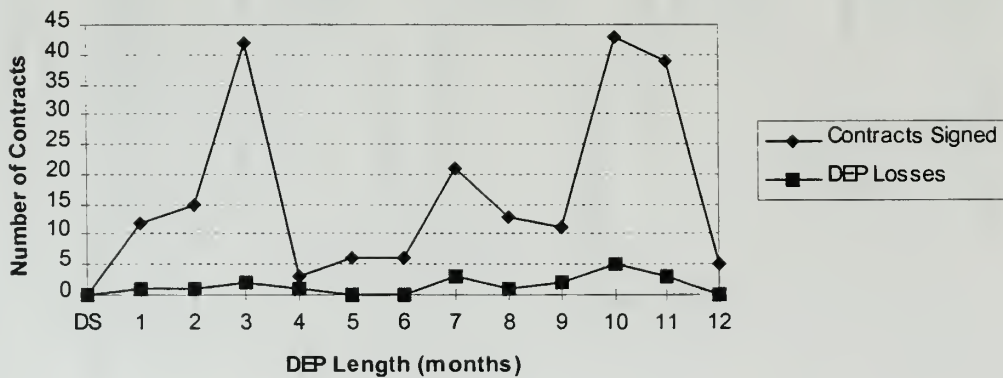
FY92 February WF Contracts
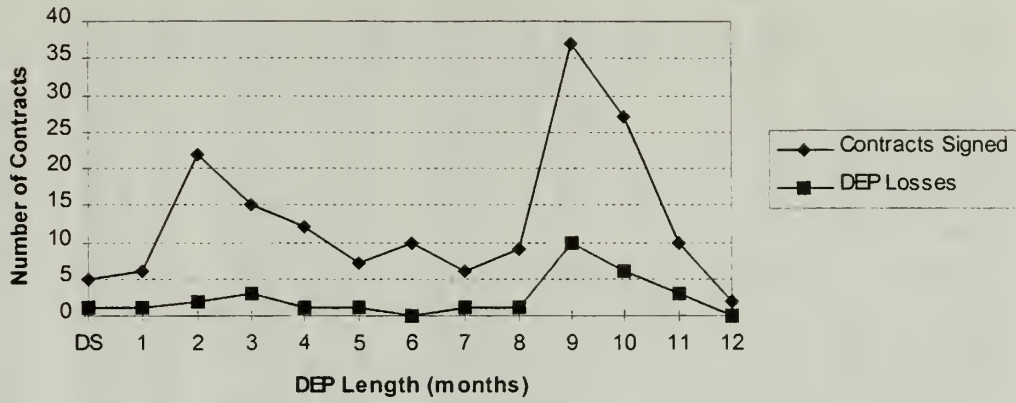
FY93 February WF Contracts
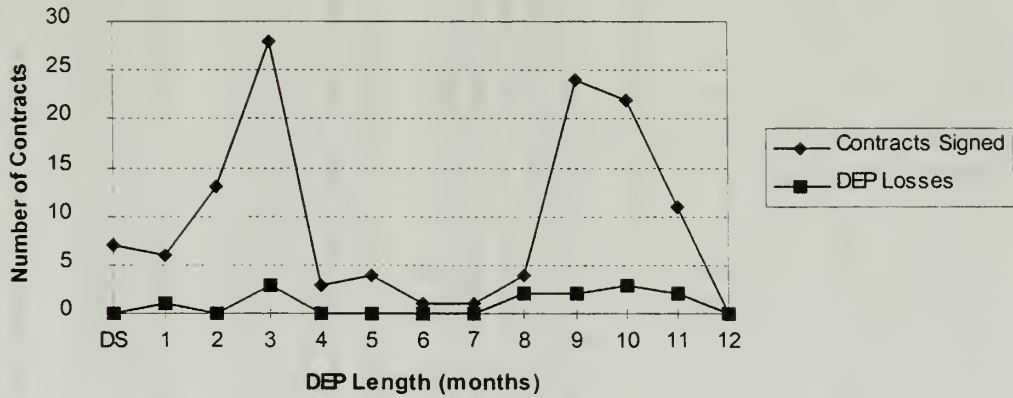
FY94 February WF Contracts
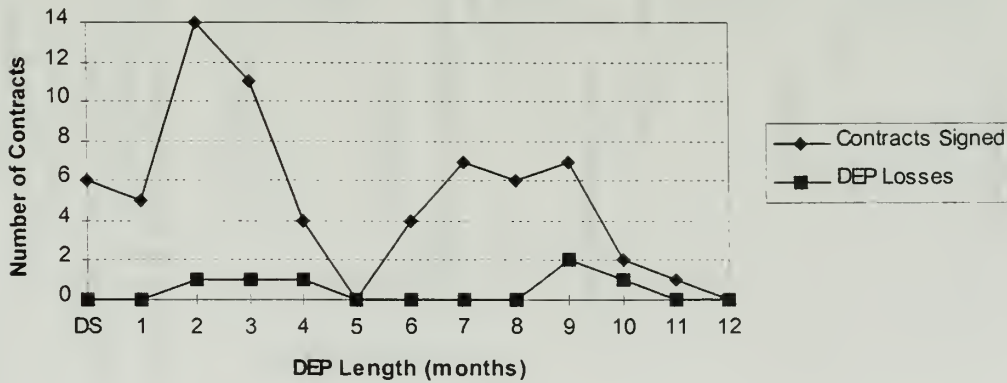
March Work Force (WF) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	4	6	5	2	1	2	2	23	50	30	28	13	3	169
FY 92	14	7	12	3	3	2	7	4	13	17	22	6	5	115
FY 93	6	11	7	2	2	1	2	11	17	40	15	14	6	134
FY 94	10	11	11	3	1	3	2	3	22	8	6	3	0	83
Total FY91-94 Contracts	34	35	35	10	7	8	13	41	102	95	71	36	14	501

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	1	1	0	0	0	1	1	4	8	5	5	3	0	29
FY 92	0	0	1	0	0	0	0	1	1	5	5	0	2	15
FY 93	0	1	0	0	0	0	1	2	1	6	2	1	1	15
FY 94	2	0	0	1	1	1	0	2	6	1	0	1	0	15
Total DEP Losses	3	2	1	1	1	2	2	9	16	17	12	5	3	74

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0237	0.0355	0.0296	0.0118	0.0059	0.0118	0.0118	0.1361	0.2959	0.1775	0.1657	0.0769	0.0178	1.0000
FY 92	0.1217	0.0609	0.1043	0.0261	0.0261	0.0174	0.0609	0.0348	0.1130	0.1478	0.1913	0.0522	0.0435	1.0000
FY 93	0.0448	0.0821	0.0522	0.0149	0.0149	0.0075	0.0149	0.0821	0.1269	0.2985	0.1119	0.1045	0.0448	1.0000
FY 94	0.1205	0.1325	0.1325	0.0361	0.0120	0.0361	0.0241	0.0361	0.2651	0.0964	0.0723	0.0361	0.0000	1.0000
Average DEP Length Distribution	0.0679	0.0699	0.0699	0.0200	0.0140	0.0160	0.0259	0.0818	0.2036	0.1896	0.1417	0.0719	0.0279	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.2500	0.1667	0.0000	0.0000	0.0000	0.5000	0.5000	0.1739	0.1600	0.1667	0.1786	0.2308	0.0000	0.1716
FY 92	0.0000	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.2500	0.0769	0.2941	0.2273	0.0000	0.4000	0.1304
FY 93	0.0000	0.0909	0.0000	0.0000	0.0000	0.0000	0.5000	0.1818	0.0588	0.1500	0.1333	0.0714	0.1667	0.1119
FY 94	0.2000	0.0000	0.0000	0.3333	1.0000	0.3333	0.0000	0.6667	0.2727	0.1250	0.0000	0.3333	0.0000	0.1807
Average Prob[DEP Loss]	0.0882	0.0571	0.0286	0.1000	0.1429	0.2500	0.1538	0.2195	0.1569	0.1789	0.1690	0.1389	0.2143	0.1477

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.1836	0.1340	0.0838	0.2859	0.4021	0.5501	0.3500	0.3462	0.2274	0.2560	0.2562	0.2519	0.4292	0.1788
Average Prob[DEP Loss]	0.0882	0.0571	0.0286	0.1000	0.1429	0.2500	0.1538	0.2195	0.1569	0.1789	0.1690	0.1389	0.2143	0.1477
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0928	0.0863	0.1019	0.0818	0.0259	0.0000	0.1166

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

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## Average FY91-94 March WF Contracts
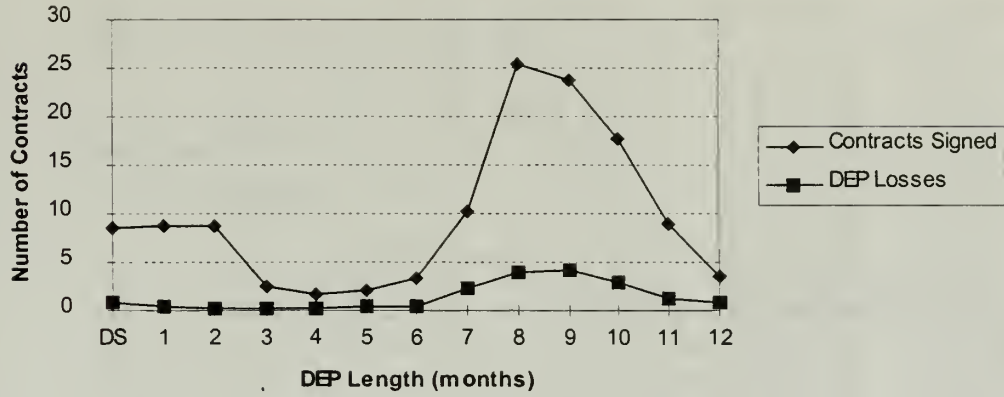
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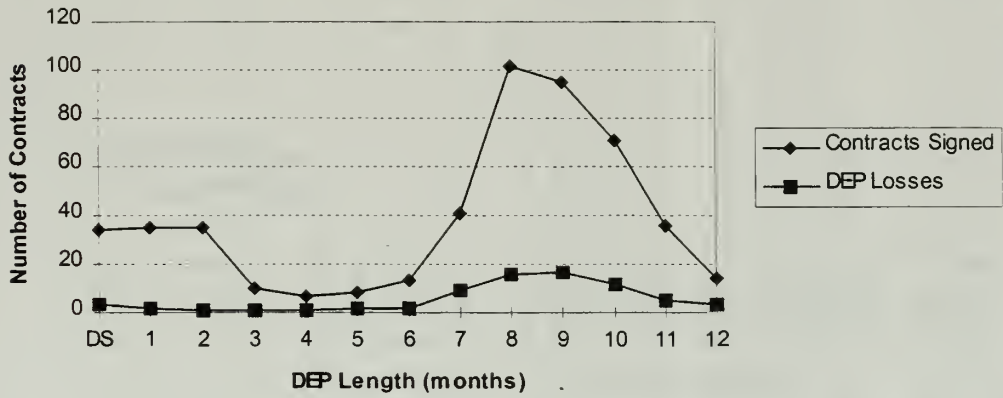
FY91 March WF Contracts

FY92 March WF Contracts

FY93 March WF Contracts

FY94 March WF Contracts

70
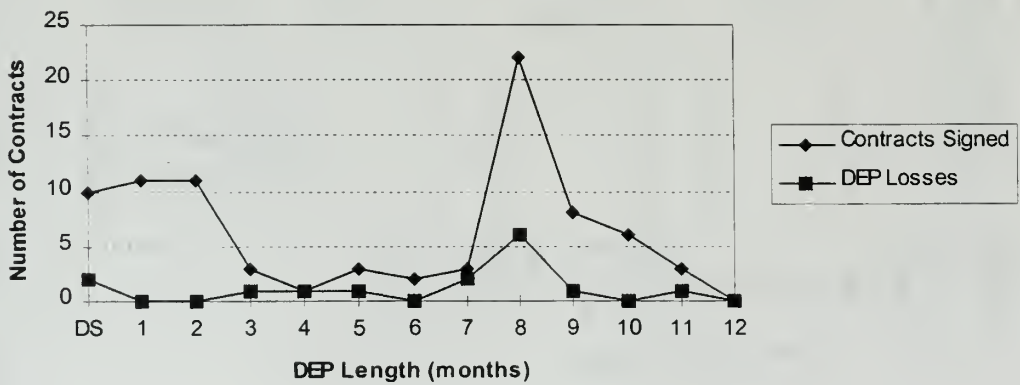
April Work Force (WF) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	7	0	1	2	4	1	9	19	42	30	30	20	3	168
FY 92	18	10	9	1	1	6	4	20	34	27	18	12	0	160
FY 93	8	10	1	2	2	1	2	4	18	15	11	15	3	92
FY 94	6	18	4	1	1	1	4	6	11	8	5	2	0	67
Total FY91-94 Contracts	39	38	15	6	8	9	19	49	105	80	64	49	6	487

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	0	1	5	5	7	1	5	0	24
FY 92	0	0	1	1	0	2	1	2	6	2	3	1	0	19
FY 93	0	0	0	1	0	0	0	1	8	1	3	3	0	17
FY 94	0	0	0	0	1	0	0	2	0	1	3	0	0	7
Total DEP Losses	0	0	1	2	1	2	2	10	19	11	10	9	0	67

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0417	0.0000	0.0060	0.0119	0.0238	0.0060	0.0536	0.1131	0.2500	0.1786	0.1786	0.1190	0.0179	1.0000
FY 92	0.1125	0.0625	0.0563	0.0063	0.0063	0.0375	0.0250	0.1250	0.2125	0.1688	0.1125	0.0750	0.0000	1.0000
FY 93	0.0870	0.1087	0.0109	0.0217	0.0217	0.0109	0.0217	0.0435	0.1957	0.1630	0.1196	0.1630	0.0326	1.0000
FY 94	0.0896	0.2687	0.0597	0.0149	0.0149	0.0149	0.0597	0.0896	0.1642	0.1194	0.0746	0.0299	0.0000	1.0000
Average DEP Length Distribution	0.0801	0.0780	0.0308	0.0123	0.0164	0.0185	0.0390	0.1006	0.2156	0.1643	0.1314	0.1006	0.0123	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1111	0.2632	0.1190	0.2333	0.0333	0.2500	0.0000	0.1429
FY 92	0.0000	0.0000	0.1111	1.0000	0.0000	0.3333	0.2500	0.1000	0.1765	0.0741	0.1667	0.0833	0.0000	0.1188
FY 93	0.0000	0.0000	0.0000	0.5000	0.0000	0.0000	0.0000	0.2500	0.4444	0.0667	0.2727	0.2000	0.0000	0.1848
FY 94	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.3333	0.0000	0.1250	0.6000	0.0000	0.0000	0.1045
Average Prob[DEP Loss]	0.0000	0.0000	0.0667	0.3333	0.1250	0.2222	0.1053	0.2041	0.1810	0.1375	0.1563	0.1837	0.0000	0.1376

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.0000	0.1929	0.7105	0.3542	0.4938	0.2433	0.3169	0.2546	0.2130	0.2452	0.2921	0.0000	0.1682
Average Prob[DEP Loss]	0.0000	0.0000	0.0667	0.3333	0.1250	0.2222	0.1053	0.2041	0.1810	0.1375	0.1563	0.1837	0.0000	0.1376
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0912	0.1073	0.0620	0.0673	0.0753	0.0000	0.1070

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

## Average FY91-94 April WF Contracts

Total FY91-94 April WF Contracts
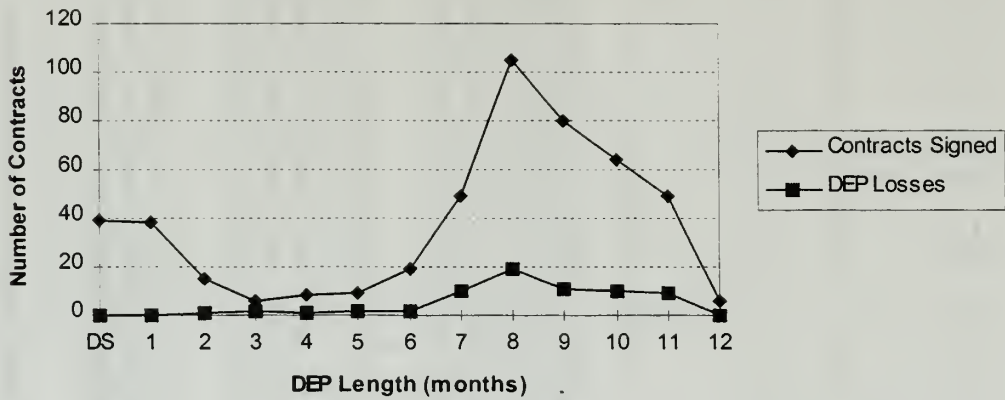

FY91 April WF Contracts

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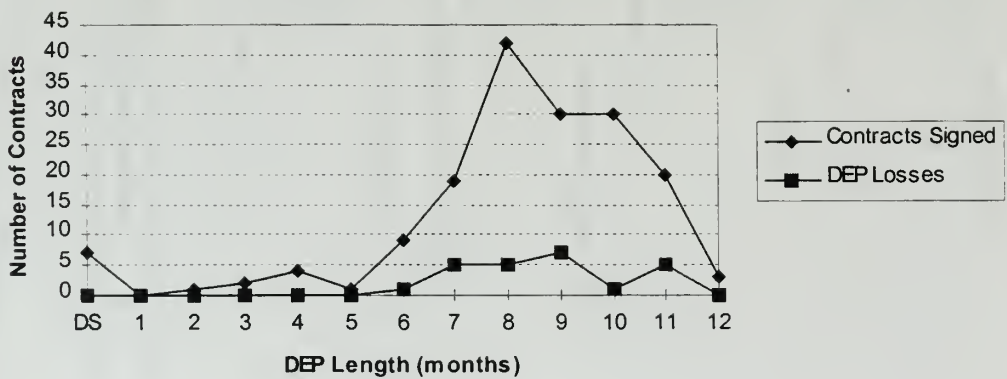
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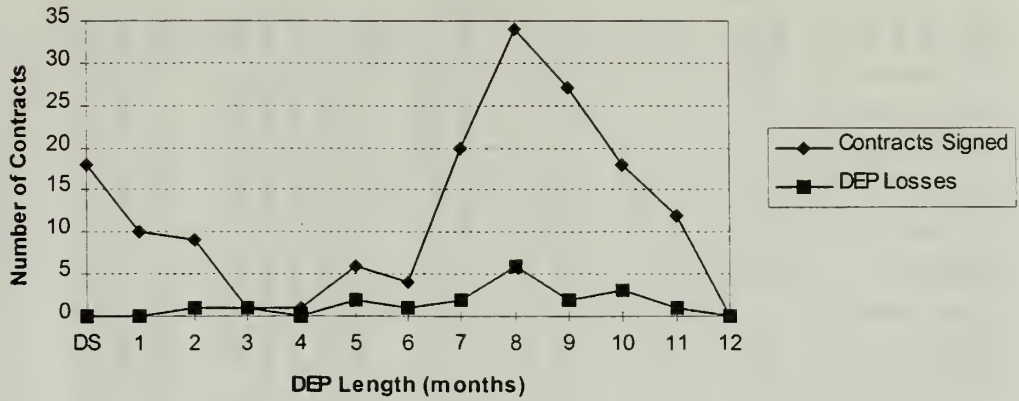
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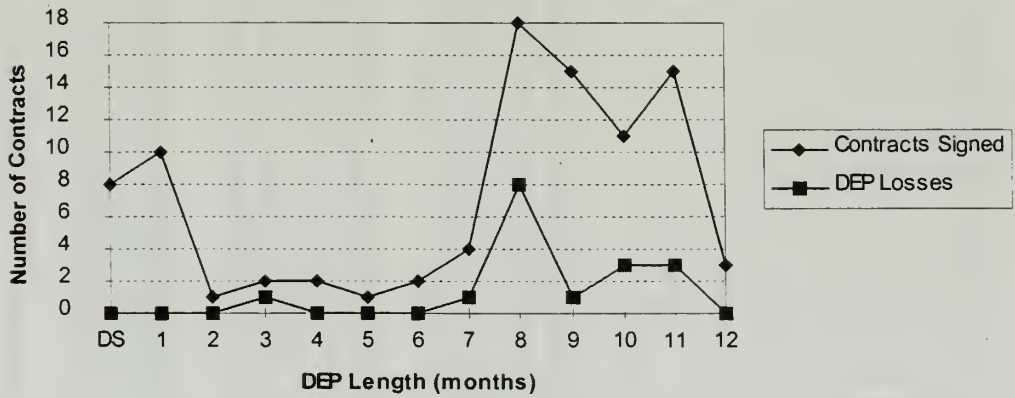
FY94 April WF Contracts

73
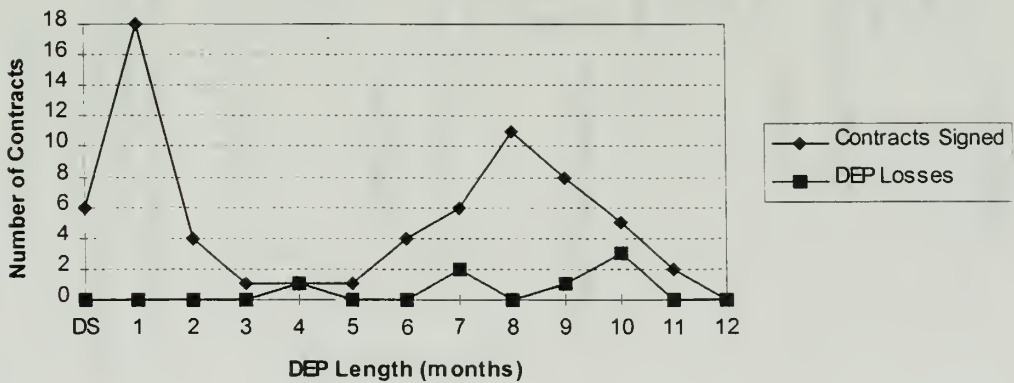
May Work Force (WF) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	6	6	4	3	5	5	15	25	36	39	24	7	3	178
FY 92	16	4	4	2	5	2	6	30	13	29	18	14	6	149
FY 93	11	9	4	2	0	3	10	12	21	14	5	8	6	105
FY 94	6	3	0	1	3	3	28	19	15	1	0	1	0	80
Total FY91-94 Contracts	39	22	12	8	13	13	59	86	85	83	47	30	15	512

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	1	1	0	1	0	1	0	4	7	10	6	3	2	36
FY 92	0	0	0	0	1	1	0	3	1	2	0	4	1	13
FY 93	0	0	1	0	0	1	1	0	2	3	2	2	2	14
FY 94	1	0	0	0	0	0	3	1	6	0	0	1	0	12
Total DEP Losses	2	1	1	1	1	3	4	8	16	15	8	10	5	75

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0337	0.0337	0.0225	0.0169	0.0281	0.0281	0.0843	0.1404	0.2022	0.2191	0.1348	0.0393	0.0169	1.0000
FY 92	0.1074	0.0268	0.0268	0.0134	0.0336	0.0134	0.0403	0.2013	0.0872	0.1946	0.1208	0.0940	0.0403	1.0000
FY 93	0.1048	0.0857	0.0381	0.0190	0.0000	0.0286	0.0952	0.1143	0.2000	0.1333	0.0476	0.0762	0.0571	1.0000
FY 94	0.0750	0.0375	0.0000	0.0125	0.0375	0.0375	0.3500	0.2375	0.1875	0.0125	0.0000	0.0125	0.0000	1.0000
Average DEP Length Distribution	0.0762	0.0430	0.0234	0.0156	0.0254	0.0254	0.1152	0.1680	0.1660	0.1621	0.0918	0.0586	0.0293	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.1667	0.1667	0.0000	0.3333	0.0000	0.2000	0.0000	0.1600	0.1944	0.2564	0.2500	0.4286	0.6667	0.2022
FY 92	0.0000	0.0000	0.0000	0.0000	0.2000	0.5000	0.0000	0.1000	0.0769	0.0690	0.0000	0.2857	0.1667	0.0872
FY 93	0.0000	0.0000	0.2500	0.0000	0.0000	0.3333	0.1000	0.0000	0.0952	0.2143	0.4000	0.2500	0.3333	0.1333
FY 94	0.1667	0.0000	0.0000	0.0000	0.0000	0.0000	0.1071	0.0526	0.4000	0.0000	0.0000	1.0000	0.0000	0.1500
Average Prob[DEP Loss]	0.0513	0.0455	0.0833	0.1250	0.0769	0.2308	0.0678	0.0930	0.1882	0.1807	0.1702	0.3333	0.3333	0.1465

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.1205	0.1325	0.2397	0.3542	0.2218	0.4598	0.1319	0.1544	0.2713	0.2635	0.2777	0.5020	0.5719	0.1771
Average Prob[DEP Loss]	0.0513	0.0455	0.0833	0.1250	0.0769	0.2308	0.0678	0.0930	0.1882	0.1807	0.1702	0.3333	0.3333	0.1465
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0017	0.0036	0.0316	0.1051	0.0979	0.0628	0.1646	0.0948	0.1159

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

## Average FY91-94 May WF Contracts
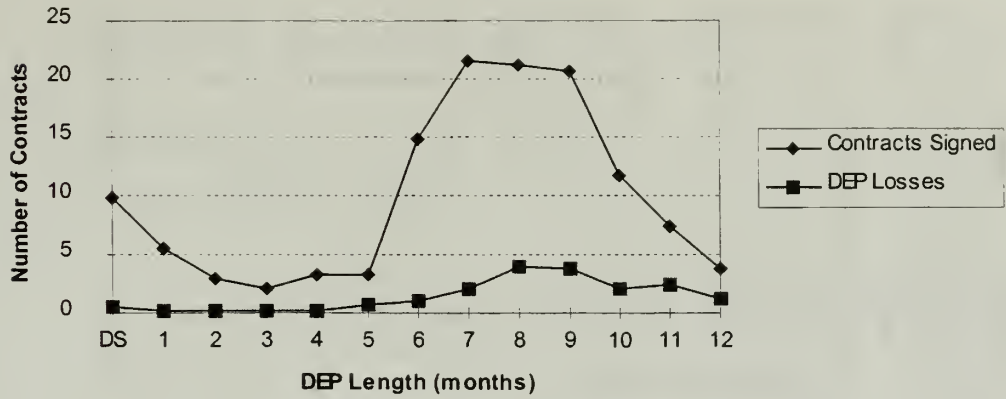
Total FY91-94 May WF Contracts
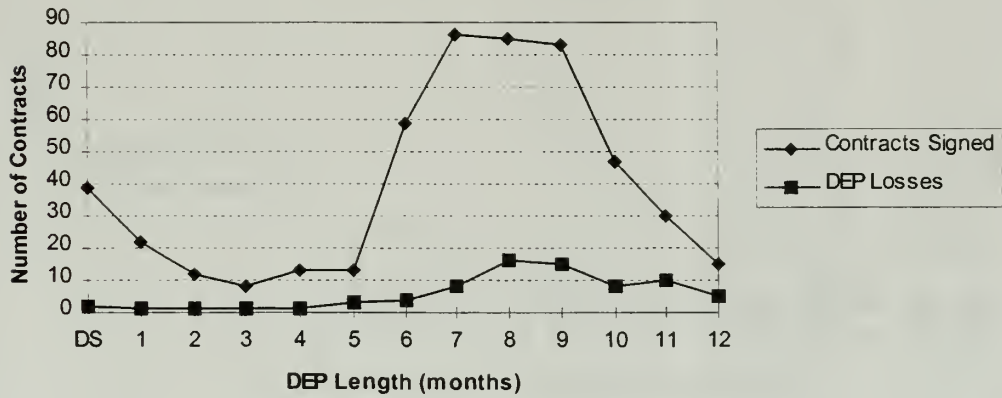
FY91 May WF Contracts

75
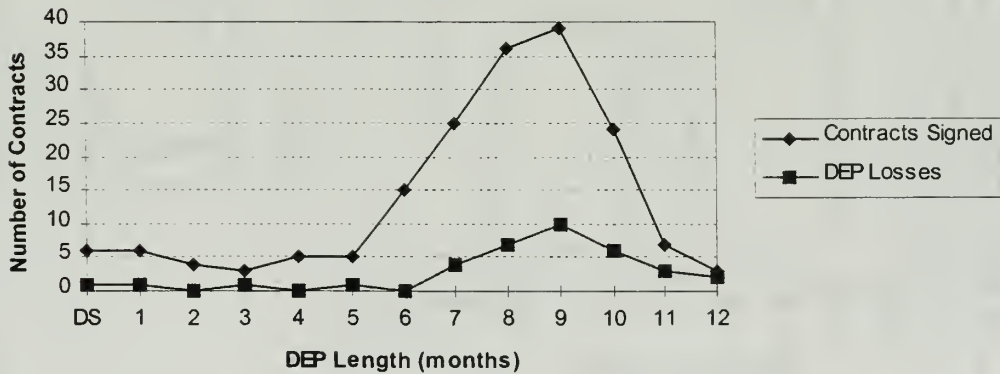
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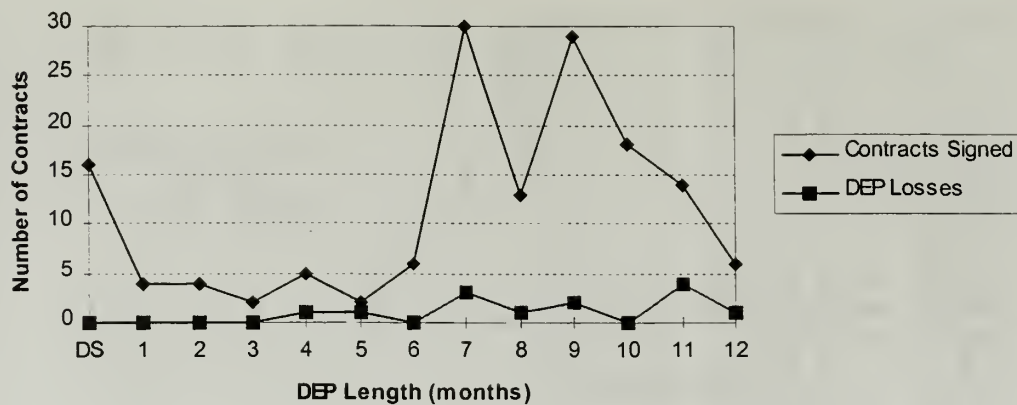
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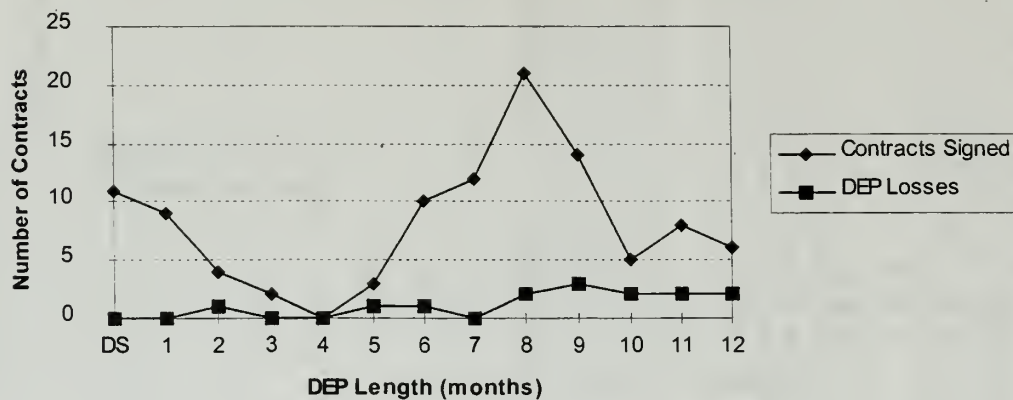
FY94 May WF Contracts

76
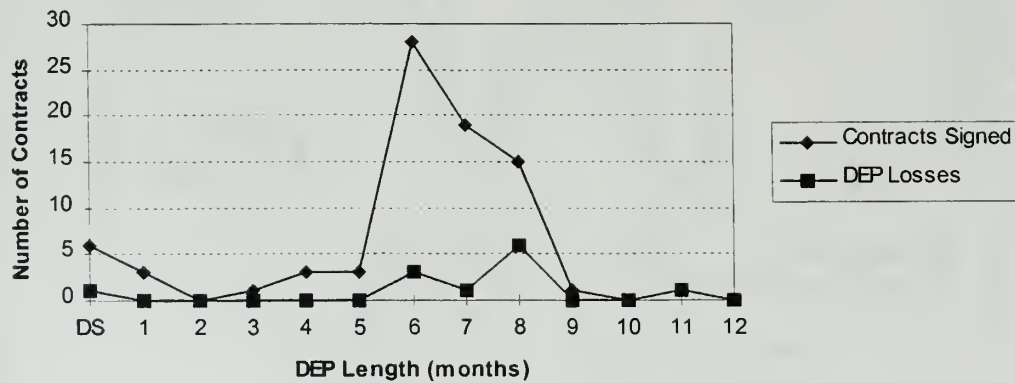
June Work Force (WF) Contracts

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	8	3	14	7	10	16	6	46	35	36	48	8	3	240
FY 92	19	1	4	1	7	7	29	20	38	47	20	22	4	219
FY 93	8	7	11	0	2	10	7	25	32	29	13	15	4	163
FY 94	10	3	5	5	7	25	32	22	1	3	0	2	0	115
Total FY91-94 Contracts	45	14	34	13	26	58	74	113	106	115	81	47	11	737

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	1	0	0	2	3	0	7	8	5	11	3	0	40
FY 92	0	0	0	0	0	0	2	5	6	8	4	9	1	35
FY 93	1	0	1	0	0	1	1	3	4	3	4	6	2	26
FY 94	0	0	0	0	1	2	3	3	1	0	0	2	0	12
Total DEP Losses	1	1	1	0	3	6	6	18	19	16	19	20	3	113

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0333	0.0125	0.0583	0.0292	0.0417	0.0667	0.0250	0.1917	0.1458	0.1500	0.2000	0.0333	0.0125	1.0000
FY 92	0.0868	0.0046	0.0183	0.0046	0.0320	0.0320	0.1324	0.0913	0.1735	0.2146	0.0913	0.1005	0.0183	1.0000
FY 93	0.0491	0.0429	0.0675	0.0000	0.0123	0.0613	0.0429	0.1534	0.1963	0.1779	0.0798	0.0920	0.0245	1.0000
FY 94	0.0870	0.0261	0.0435	0.0435	0.0609	0.2174	0.2783	0.1913	0.0087	0.0261	0.0000	0.0174	0.0000	1.0000
Average DEP Length Distribution	0.0611	0.0190	0.0461	0.0176	0.0353	0.0787	0.1004	0.1533	0.1438	0.1560	0.1099	0.0638	0.0149	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.3333	0.0000	0.0000	0.2000	0.1875	0.0000	0.1522	0.2286	0.1389	0.2292	0.3750	0.0000	0.1667
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0690	0.2500	0.1579	0.1702	0.2000	0.4091	0.2500	0.1598
FY 93	0.1250	0.0000	0.0909	0.0000	0.0000	0.1000	0.1429	0.1200	0.1250	0.1034	0.3077	0.4000	0.5000	0.1595
FY 94	0.0000	0.0000	0.0000	0.0000	0.1429	0.0800	0.0938	0.1364	1.0000	0.0000	0.0000	1.0000	0.0000	0.1043
Average Prob[DEP Loss]	0.0222	0.0714	0.0294	0.0000	0.1154	0.1034	0.0811	0.1593	0.1792	0.1391	0.2346	0.4255	0.2727	0.1533

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0653	0.2063	0.0862	0.0000	0.2382	0.1818	0.1433	0.2268	0.2523	0.2024	0.3268	0.5669	0.5359	0.1793
Average Prob[DEP Loss]	0.0222	0.0714	0.0294	0.0000	0.1154	0.1034	0.0811	0.1593	0.1792	0.1391	0.2346	0.4255	0.2727	0.1533
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0251	0.0189	0.0918	0.1062	0.0759	0.1423	0.2842	0.0095	0.1273

DEP Length (months)

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

Average FY91-94 June WF Contracts
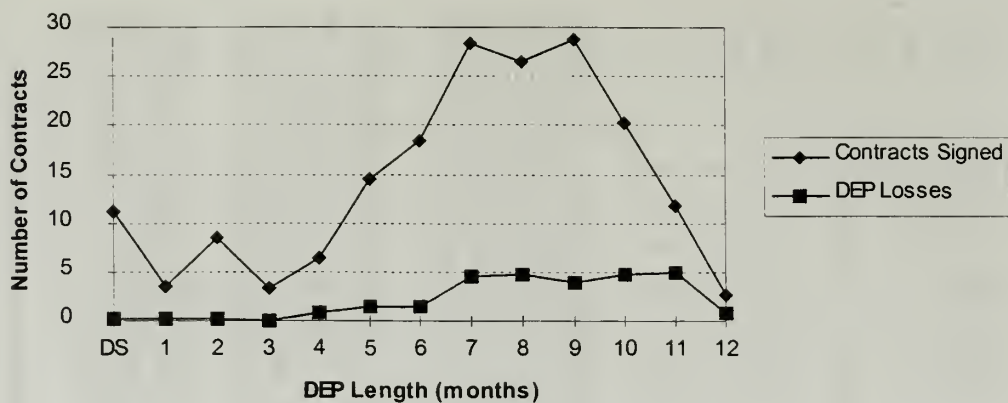
Total FY91-94 June WF Contracts
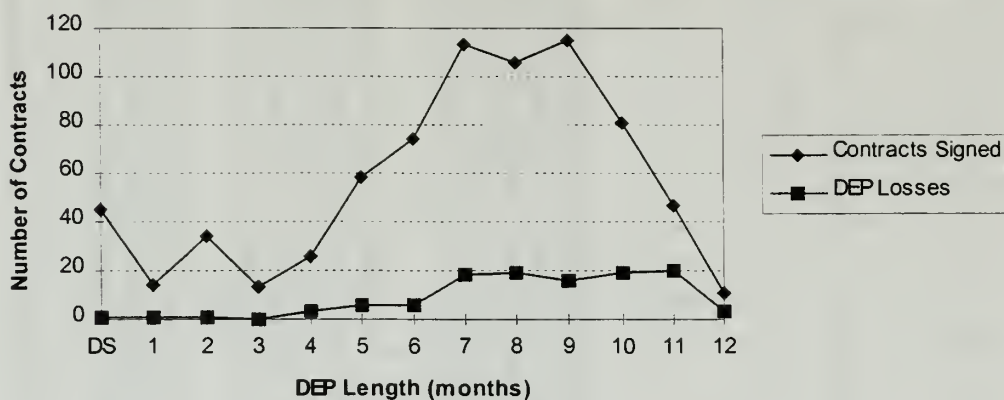
FY91 June WF Contracts

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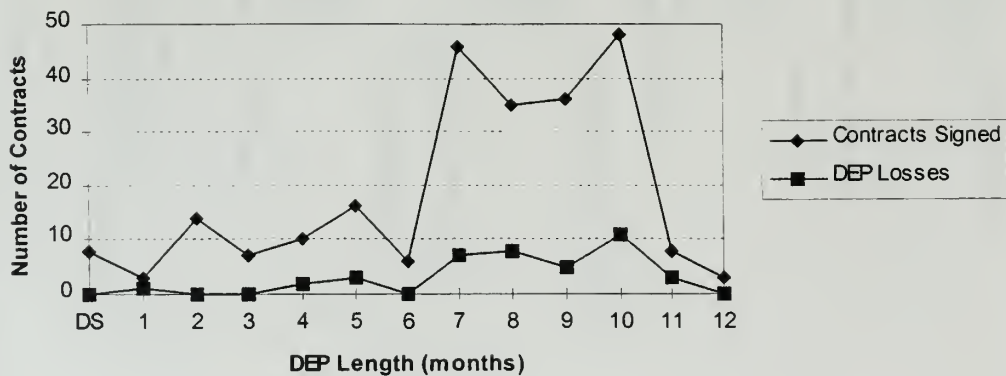
FY92 June WF Contracts
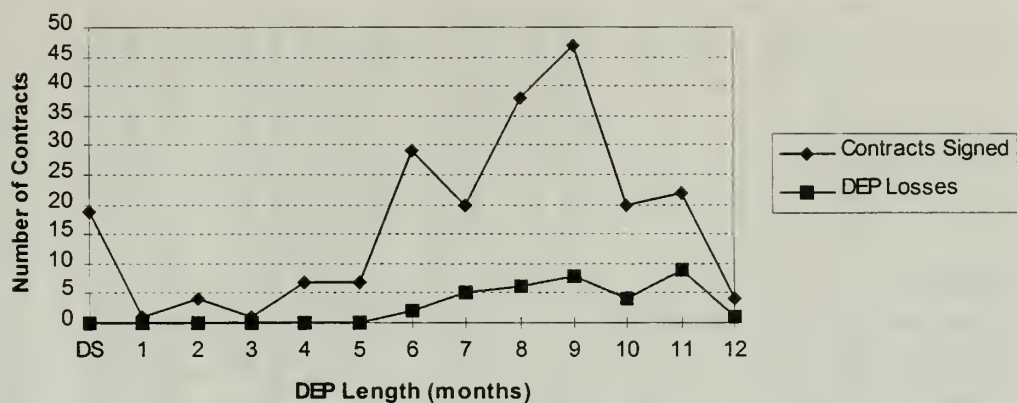
FY93 June WF Contracts
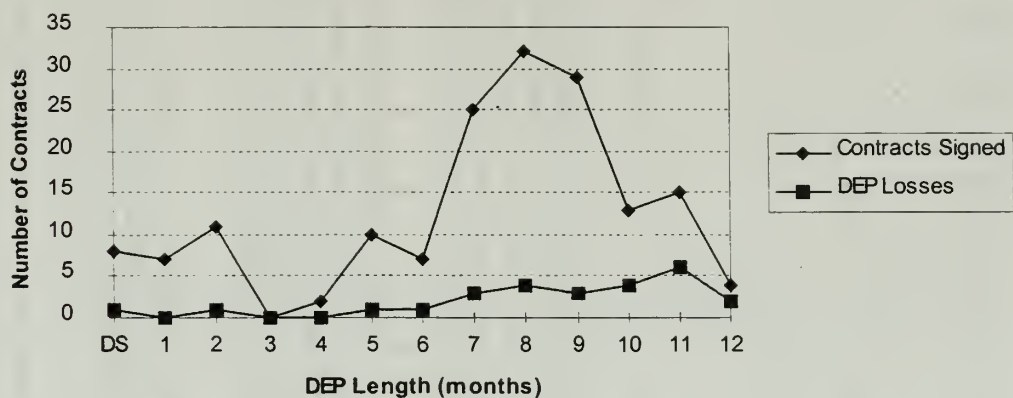
FY94 June WF Contracts
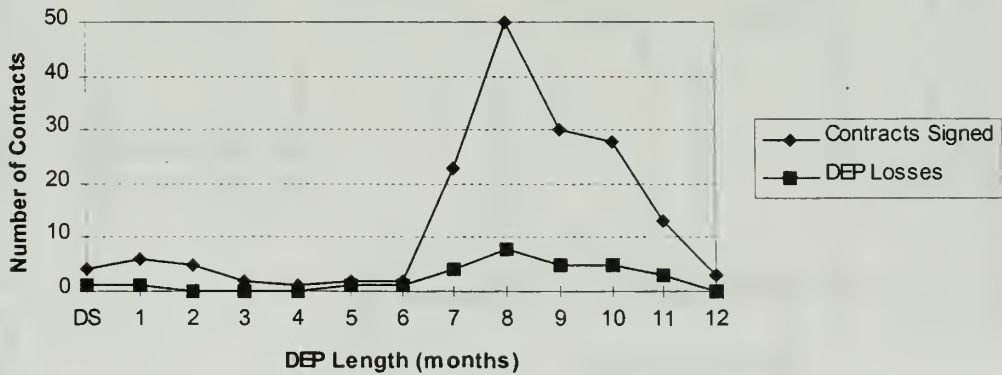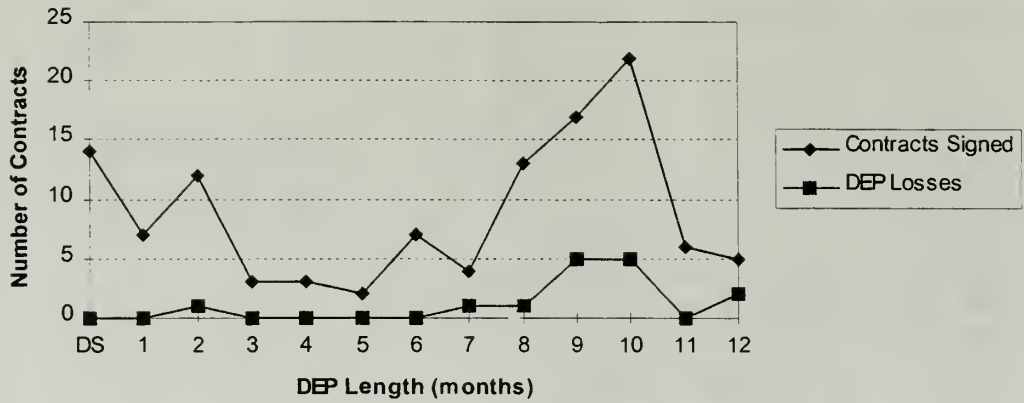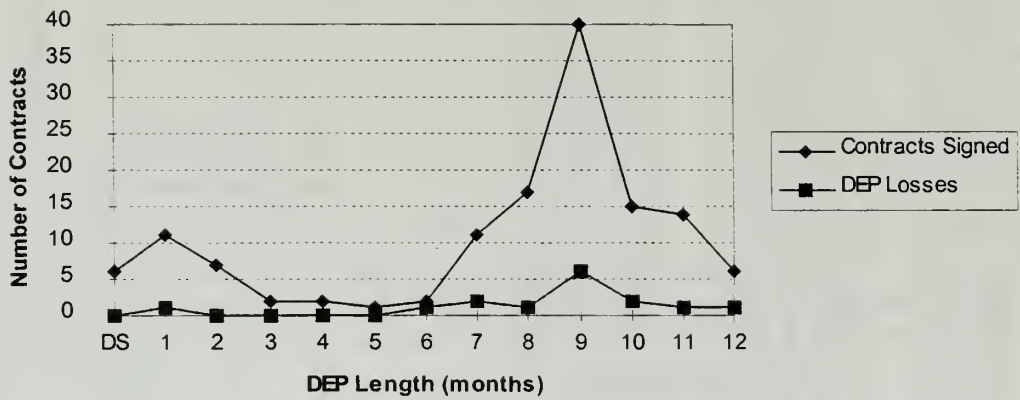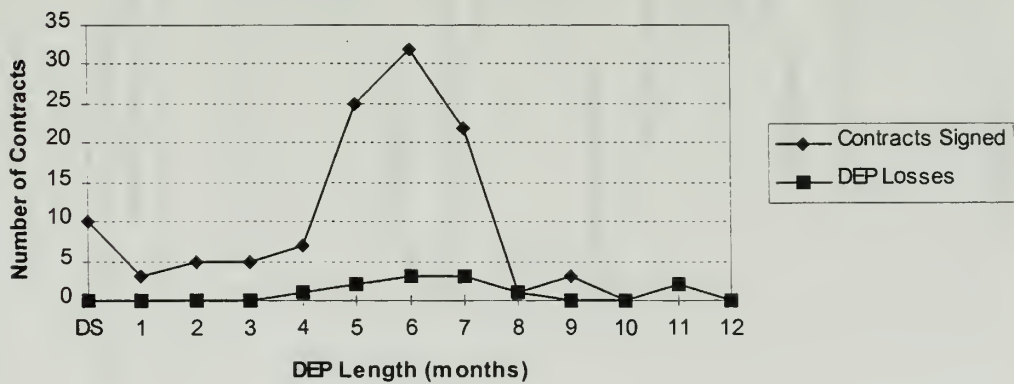
July Work Force (WF) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	10	6	10	7	12	12	33	33	39	53	30	2	1	248
FY 92	9	4	2	2	8	14	6	17	35	36	24	7	5	169
FY 93	5	5	2	3	5	11	5	30	44	22	7	3	9	151
FY 94	3	5	2	5	16	37	14	14	4	1	1	1	0	103
Total FY91-94 Contracts	27	20	16	17	41	74	58	94	122	112	62	13	15	671

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	2	1	1	0	7	4	6	9	2	0	0	32
FY 92	0	0	0	0	0	2	0	3	6	7	5	2	0	25
FY 93	0	0	0	0	1	1	2	4	5	6	0	0	4	23
FY 94	0	0	0	0	0	4	5	2	2	0	0	0	0	13
Total DEP Losses	0	0	2	1	2	7	14	13	19	22	7	2	4	93

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0403	0.0242	0.0403	0.0282	0.0484	0.0484	0.1331	0.1331	0.1573	0.2137	0.1210	0.0081	0.0040	1.0000
FY 92	0.0533	0.0237	0.0118	0.0118	0.0473	0.0828	0.0355	0.1006	0.2071	0.2130	0.1420	0.0414	0.0296	1.0000
FY 93	0.0331	0.0331	0.0132	0.0199	0.0331	0.0728	0.0331	0.1987	0.2914	0.1457	0.0464	0.0199	0.0596	1.0000
FY 94	0.0291	0.0485	0.0194	0.0485	0.1553	0.3592	0.1359	0.1359	0.0388	0.0097	0.0097	0.0097	0.0000	1.0000
Average DEP Length Distribution	0.0402	0.0298	0.0238	0.0253	0.0611	0.1103	0.0864	0.1401	0.1818	0.1669	0.0924	0.0194	0.0224	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.2000	0.1429	0.0833	0.0000	0.2121	0.1212	0.1538	0.1698	0.0667	0.0000	0.0000	0.1290
FY 92	0.0000	0.0000	0.0000	0.0000	0.0000	0.1429	0.0000	0.1765	0.1714	0.1944	0.2083	0.2857	0.0000	0.1479
FY 93	0.0000	0.0000	0.0000	0.0000	0.2000	0.0909	0.4000	0.1333	0.1136	0.2727	0.0000	0.0000	0.4444	0.1523
FY 94	0.0000	0.0000	0.0000	0.0000	0.0000	0.1081	0.3571	0.1429	0.5000	0.0000	0.0000	0.0000	0.0000	0.1262
Average Prob[DEP Loss]	0.0000	0.0000	0.1250	0.0588	0.0488	0.0946	0.2414	0.1383	0.1557	0.1964	0.1129	0.1538	0.2667	0.1386

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.0000	0.2871	0.1707	0.1147	0.1613	0.3515	0.2081	0.2201	0.2700	0.1917	0.3500	0.4905	0.1647
Average Prob[DEP Loss]	0.0000	0.0000	0.1250	0.0588	0.0488	0.0946	0.2414	0.1383	0.1557	0.1964	0.1129	0.1538	0.2667	0.1386
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0279	0.1312	0.0685	0.0914	0.1228	0.0341	0.0000	0.0429	0.1125

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

Average FY91-94 July WF Contracts

Total FY91-94 July WF Contracts
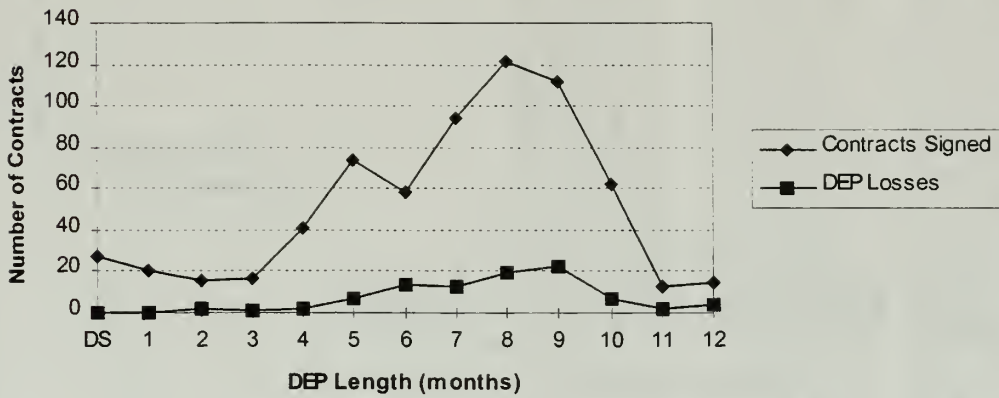
FY91 July WF Contracts

81
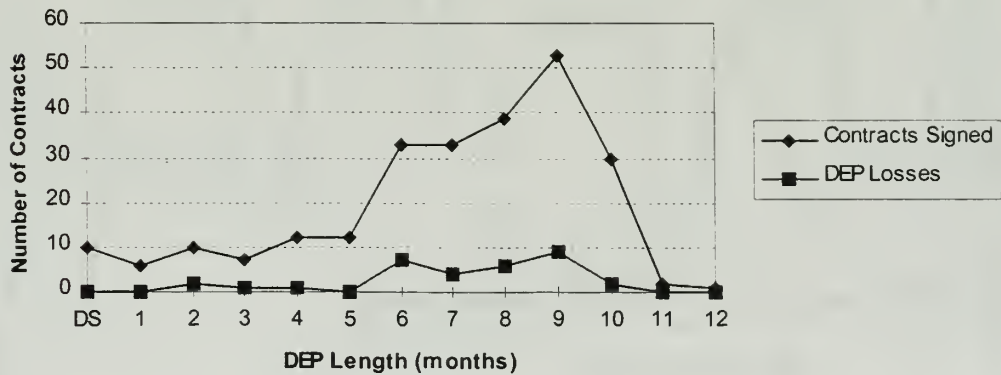
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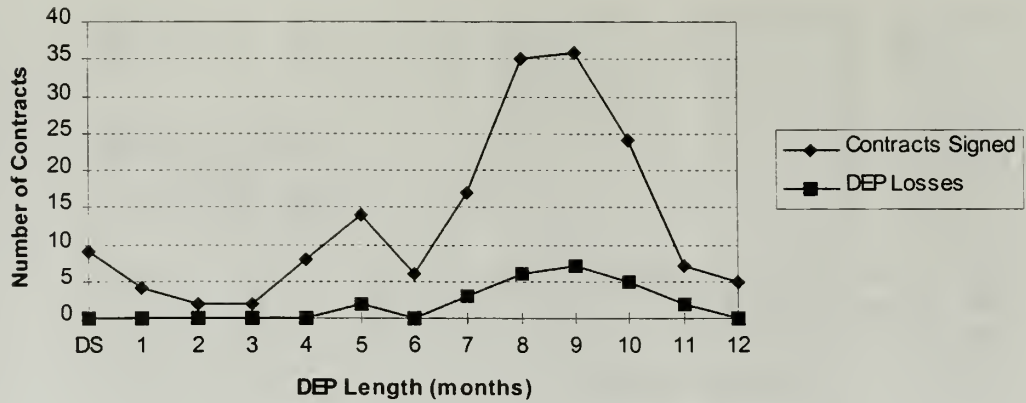
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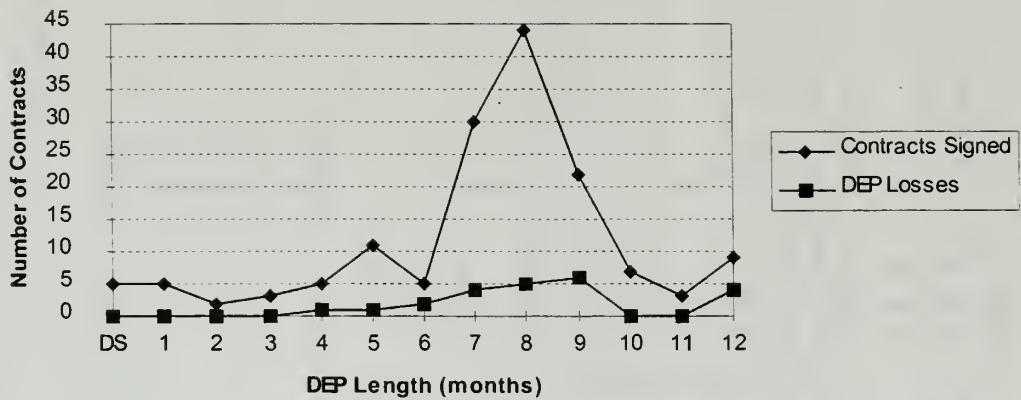
FY94 July WF Contracts

82
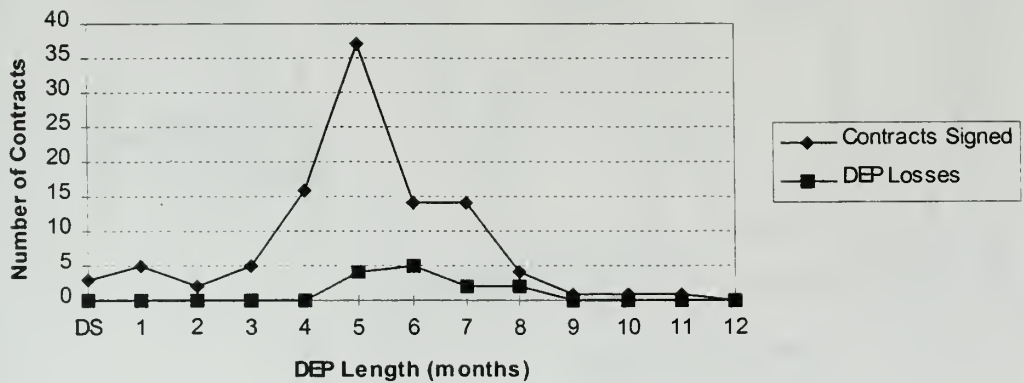
August Work Force (WF) Contracts

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	5	3	5	10	8	18	33	32	32	39	9	4	3	201
FY 92	12	3	7	7	11	8	11	17	39	9	5	8	2	139
FY 93	3	6	2	1	10	4	15	26	23	11	4	0	3	108
FY 94	2	3	1	7	34	31	16	8	2	3	1	0	0	108
Total FY91-94 Contracts	22	15	15	25	63	61	75	83	96	62	19	12	8	556

DEP Length (months)

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	3	2	0	4	5	5	6	1	3	0	29
FY 92	0	0	2	2	1	0	1	0	7	2	3	2	1	21
FY 93	0	0	0	0	1	1	1	6	5	2	3	0	2	21
FY 94	0	0	0	2	3	1	3	0	0	1	1	0	0	11
Total DEP Losses	0	0	2	7	7	2	9	11	17	11	8	5	3	82

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0249	0.0149	0.0249	0.0498	0.0398	0.0896	0.1642	0.1592	0.1592	0.1940	0.0448	0.0199	0.0149	1.0000
FY 92	0.0863	0.0216	0.0504	0.0504	0.0791	0.0576	0.0791	0.1223	0.2806	0.0647	0.0360	0.0576	0.0144	1.0000
FY 93	0.0278	0.0556	0.0185	0.0093	0.0926	0.0370	0.1389	0.2407	0.2130	0.1019	0.0370	0.0000	0.0278	1.0000
FY 94	0.0185	0.0278	0.0093	0.0648	0.3148	0.2870	0.1481	0.0741	0.0185	0.0278	0.0093	0.0000	0.0000	1.0000
Average DEP Length Distribution	0.0396	0.0270	0.0270	0.0450	0.1133	0.1097	0.1349	0.1493	0.1727	0.1115	0.0342	0.0216	0.0144	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.3000	0.2500	0.0000	0.1212	0.1563	0.1563	0.1538	0.1111	0.7500	0.0000	0.1443
FY 92	0.0000	0.0000	0.2857	0.2857	0.0909	0.0000	0.0909	0.0000	0.1795	0.2222	0.6000	0.2500	0.5000	0.1511
FY 93	0.0000	0.0000	0.0000	0.0000	0.1000	0.2500	0.0667	0.2308	0.2174	0.1818	0.7500	0.0000	0.6667	0.1944
FY 94	0.0000	0.0000	0.0000	0.2857	0.0882	0.0323	0.1875	0.0000	0.0000	0.3333	1.0000	0.0000	0.0000	0.1019
Average Prob[DEP Loss]	0.0000	0.0000	0.1333	0.2800	0.1111	0.0328	0.1200	0.1325	0.1771	0.1774	0.4211	0.4167	0.3750	0.1475

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.0000	0.3054	0.4560	0.1887	0.0775	0.1935	0.2055	0.2534	0.2725	0.6431	0.6956	0.7105	0.1770
Average Prob[DEP Loss]	0.0000	0.0000	0.1333	0.2800	0.1111	0.0328	0.1200	0.1325	0.1771	0.1774	0.4211	0.4167	0.3750	0.1475
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.1040	0.0335	0.0000	0.0465	0.0596	0.1007	0.0823	0.1990	0.1377	0.0395	0.1180

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

Average FY91-94 August WF Contracts
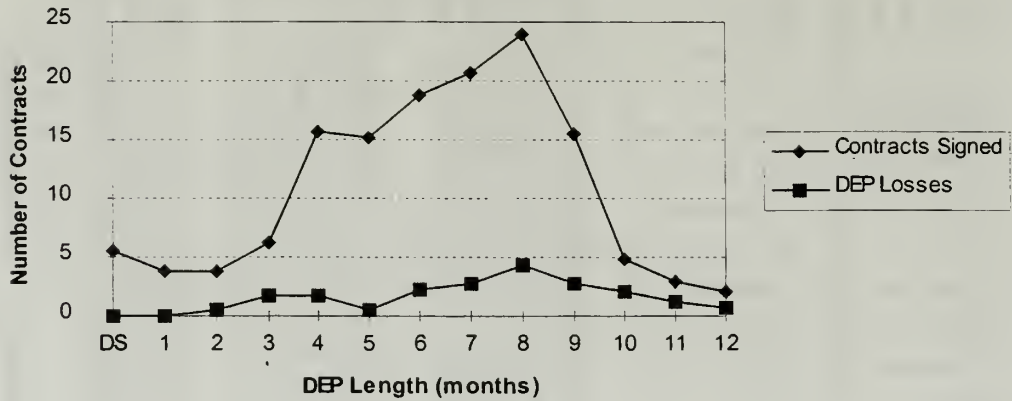

Total FY91-94 August WF Contracts
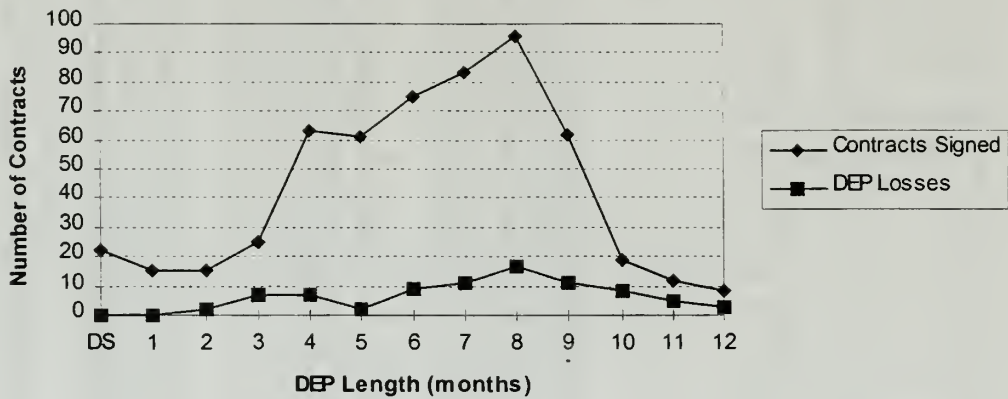
FY91 August WF Contracts

84
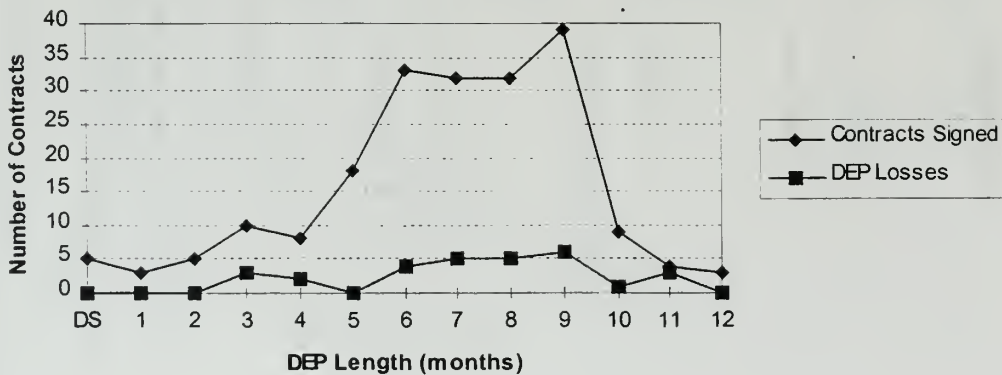
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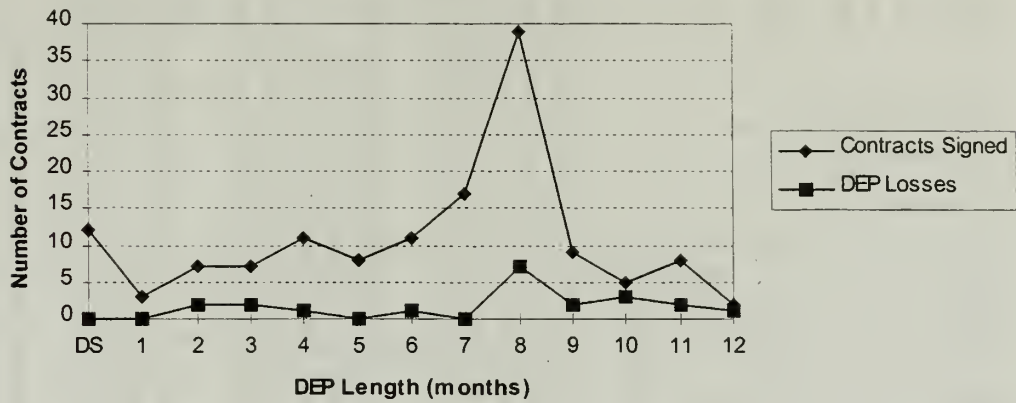
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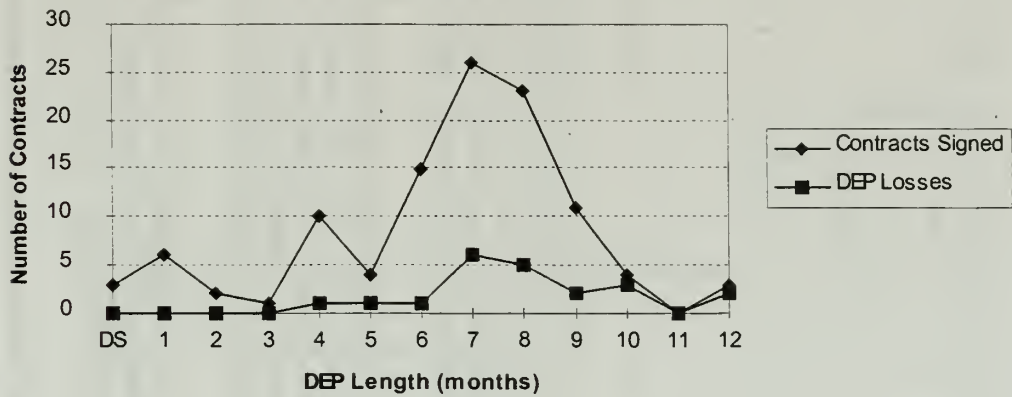
FY94 August WF Contracts

85
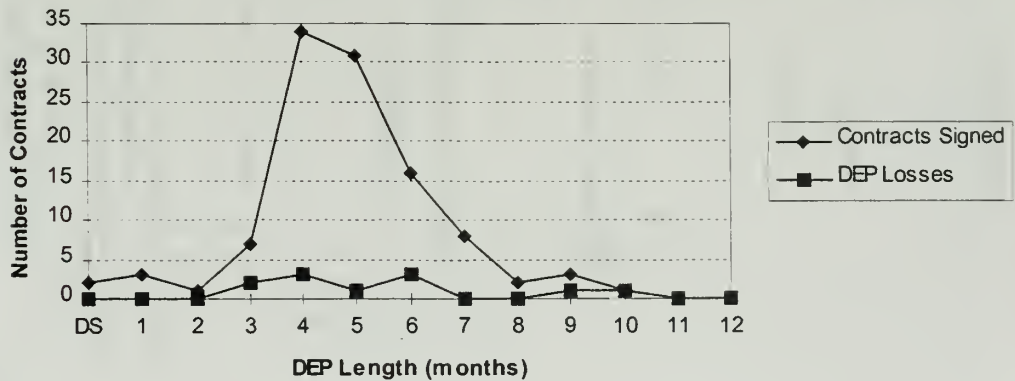
September Work Force (WF) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	4	2	5	4	7	26	21	39	25	8	5	6	0	152
FY 92	6	2	5	8	4	6	10	39	34	3	5	4	3	129
FY 93	7	6	1	5	5	12	21	21	13	0	0	2	1	94
FY 94	1	4	7	9	25	14	18	2	1	0	2	0	0	83
Total FY91-94 Contracts	18	14	18	26	41	58	70	101	73	11	12	12	4	458

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	0	0	0	0	1	3	5	5	3	1	1	0	19
FY 92	0	1	1	1	0	0	3	9	6	0	3	1	0	25
FY 93	0	0	0	2	1	1	3	4	4	0	0	2	1	18
FY 94	0	1	0	0	4	0	4	2	1	0	1	0	0	13
Total DEP Losses	0	2	1	3	5	2	13	20	16	3	5	4	1	75

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0263	0.0132	0.0329	0.0263	0.0461	0.1711	0.1382	0.2566	0.1645	0.0526	0.0329	0.0395	0.0000	1.0000
FY 92	0.0465	0.0155	0.0388	0.0620	0.0310	0.0465	0.0775	0.3023	0.2636	0.0233	0.0388	0.0310	0.0233	1.0000
FY 93	0.0745	0.0638	0.0106	0.0532	0.0532	0.1277	0.2234	0.2234	0.1383	0.0000	0.0000	0.0213	0.0106	1.0000
FY 94	0.0120	0.0482	0.0843	0.1084	0.3012	0.1687	0.2169	0.0241	0.0120	0.0000	0.0241	0.0000	0.0000	1.0000
Average DEP Length Distribution	0.0393	0.0306	0.0393	0.0568	0.0895	0.1266	0.1528	0.2205	0.1594	0.0240	0.0262	0.0262	0.0087	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0385	0.1429	0.1282	0.2000	0.3750	0.2000	0.1667	0.0000	0.1250
FY 92	0.0000	0.5000	0.2000	0.1250	0.0000	0.0000	0.3000	0.2308	0.1765	0.0000	0.6000	0.2500	0.0000	0.1938
FY 93	0.0000	0.0000	0.0000	0.4000	0.2000	0.0833	0.1429	0.1905	0.3077	0.0000	0.0000	1.0000	1.0000	0.1915
FY 94	0.0000	0.2500	0.0000	0.0000	0.1600	0.0000	0.2222	1.0000	1.0000	0.0000	0.5000	0.0000	0.0000	0.1566
Average Prob[DEP Loss]	0.0000	0.1429	0.0556	0.1154	0.1220	0.0345	0.1857	0.1980	0.2192	0.2727	0.4167	0.3333	0.2500	0.1638

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.3262	0.1614	0.2382	0.2221	0.0814	0.2768	0.2757	0.3141	0.5359	0.6956	0.6001	0.6744	0.1976
Average Prob[DEP Loss]	0.0000	0.1429	0.0556	0.1154	0.1220	0.0345	0.1857	0.1980	0.2192	0.2727	0.4167	0.3333	0.2500	0.1638
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0000	0.0218	0.0000	0.0946	0.1203	0.1243	0.0095	0.1377	0.0666	0.0000	0.1299

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

## Average FY91-94 September WF Contracts
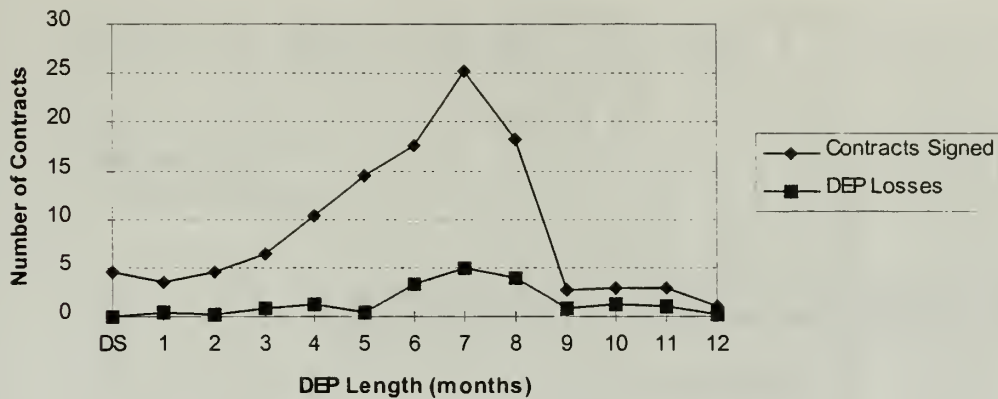
Total FY91-94 September WF Contracts
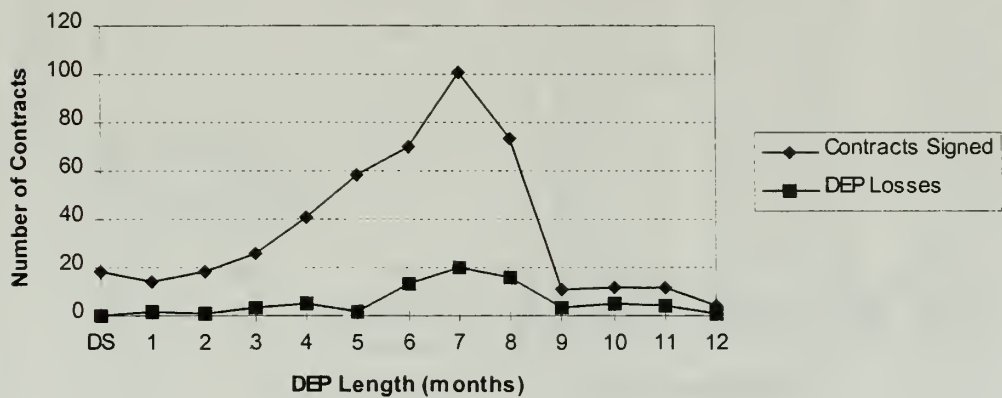
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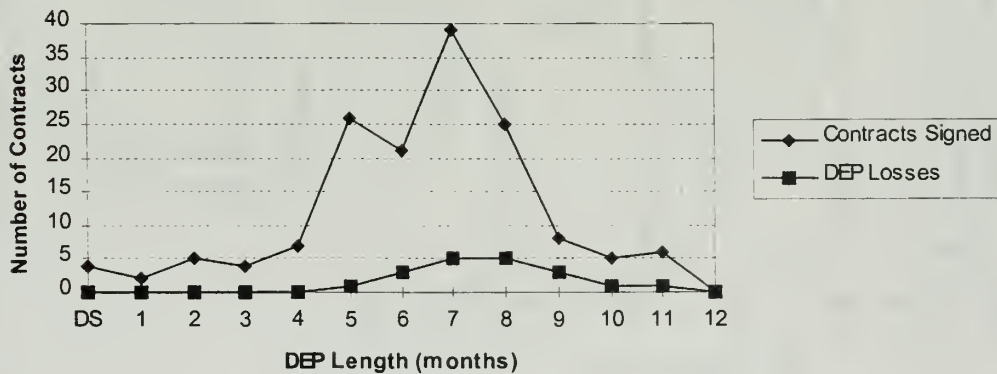
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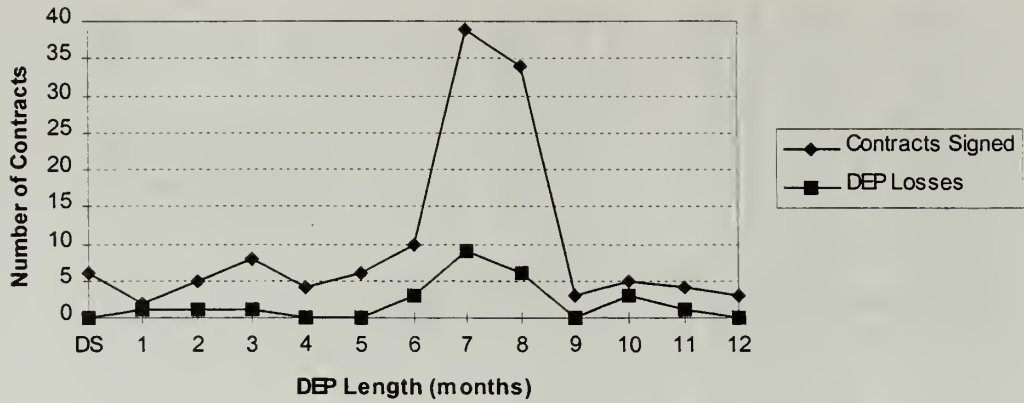
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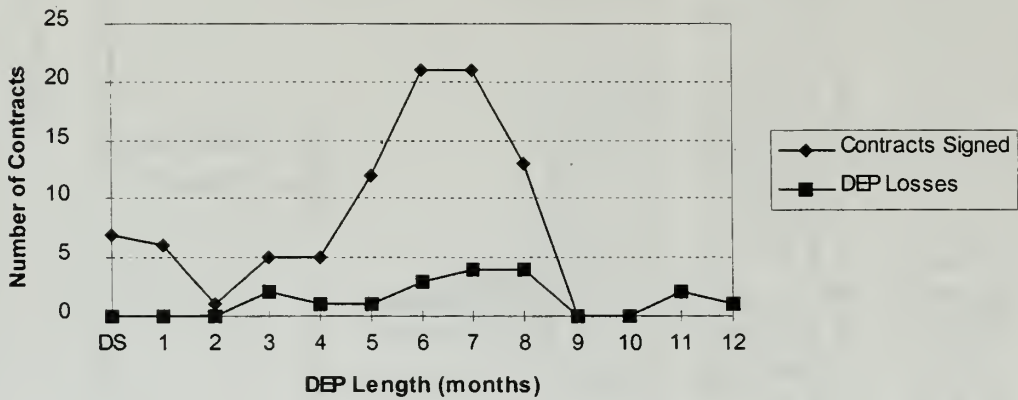
FY94 September WF Contracts

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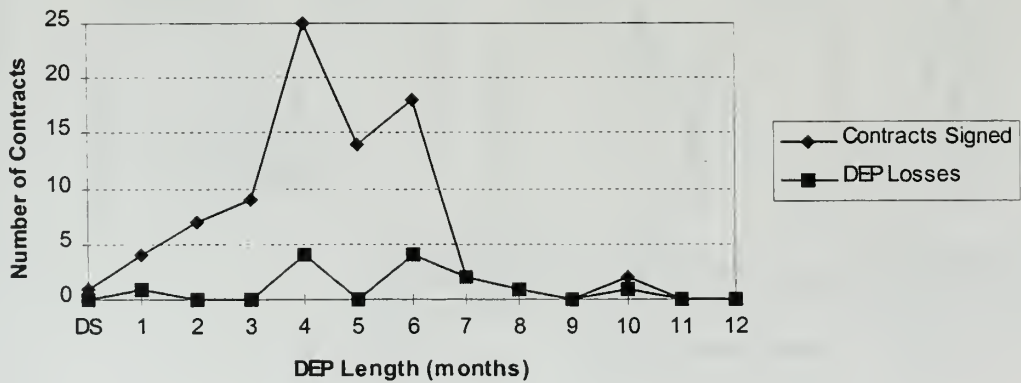
October Work Force (WF) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	3	22	26	16	5	26	0	8	21	11	7	6	15	166
FY 92	1	8	8	29	29	21	10	8	4	7	4	6	5	140
FY 93	3	8	9	5	17	26	3	1	7	2	1	8	8	98
FY 94	1	3	4	12	26	10	0	1	0	0	0	3	4	64
Total FY91-94 Contracts	8	41	47	62	77	83	13	18	32	20	12	23	32	468

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0	2	1	3	2	5	0	3	1	3	2	0	1	23
FY 92	0	0	0	2	3	3	4	2	0	0	2	0	0	16
FY 93	0	1	0	0	2	3	0	0	0	0	0	0	0	6
FY 94	0	0	1	0	0	2	0	0	0	0	0	0	0	3
Total DEP Losses	0	3	2	5	7	13	4	5	1	3	4	0	1	48

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0181	0.1325	0.1566	0.0964	0.0301	0.1566	0.0000	0.0482	0.1265	0.0663	0.0422	0.0361	0.0904	1.0000
FY 92	0.0071	0.0571	0.0571	0.2071	0.2071	0.1500	0.0714	0.0571	0.0286	0.0500	0.0286	0.0429	0.0357	1.0000
FY 93	0.0306	0.0816	0.0918	0.0510	0.1735	0.2653	0.0306	0.0102	0.0714	0.0204	0.0102	0.0816	0.0816	1.0000
FY 94	0.0156	0.0469	0.0625	0.1875	0.4063	0.1563	0.0000	0.0156	0.0000	0.0000	0.0000	0.0469	0.0625	1.0000
Average DEP Length Distribution	0.0171	0.0876	0.1004	0.1325	0.1645	0.1774	0.0278	0.0385	0.0684	0.0427	0.0256	0.0491	0.0684	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0000	0.0909	0.0385	0.1875	0.4000	0.1923	0.0000	0.3750	0.0476	0.2727	0.2857	0.0000	0.0667	0.1386
FY 92	0.0000	0.0000	0.0000	0.0690	0.1034	0.1429	0.4000	0.2500	0.0000	0.0000	0.5000	0.0000	0.0000	0.1143
FY 93	0.0000	0.1250	0.0000	0.0000	0.1176	0.1154	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0612
FY 94	0.0000	0.0000	0.2500	0.0000	0.0000	0.2000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0469
Average Prob[DEP Loss]	0.0000	0.0732	0.0426	0.0806	0.0909	0.1566	0.3077	0.2778	0.0313	0.1500	0.3333	0.0000	0.0313	0.1026

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0000	0.1529	0.1003	0.1484	0.1551	0.2348	0.5586	0.4847	0.0915	0.3065	0.6001	0.0000	0.0915	0.1301
Average Prob[DEP Loss]	0.0000	0.0732	0.0426	0.0806	0.0909	0.1566	0.3077	0.2778	0.0313	0.1500	0.3333	0.0000	0.0313	0.1026
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0000	0.0000	0.0129	0.0267	0.0784	0.0568	0.0709	0.0000	0.0000	0.0666	0.0000	0.0000	0.0751

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

## Average FY91-94 October WF Contracts
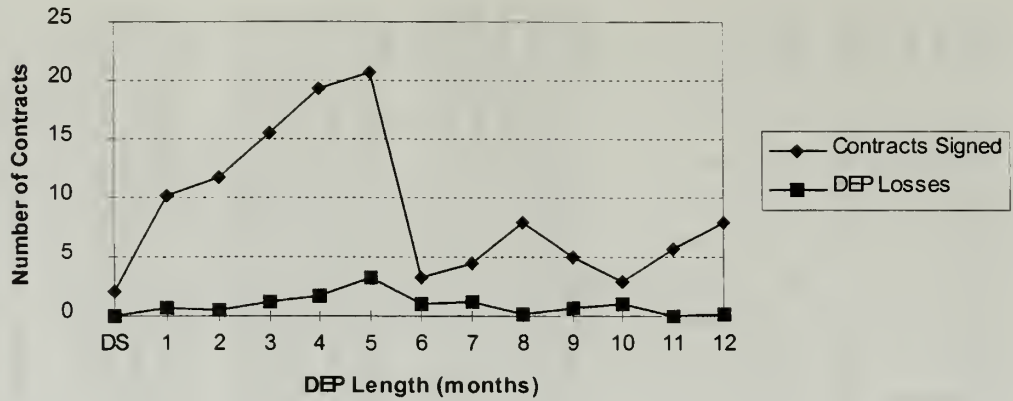
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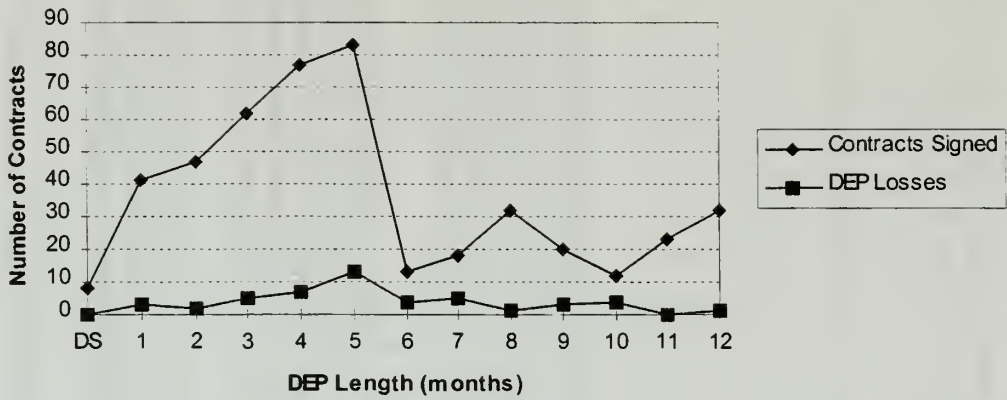
FY91 October WF Contracts

90
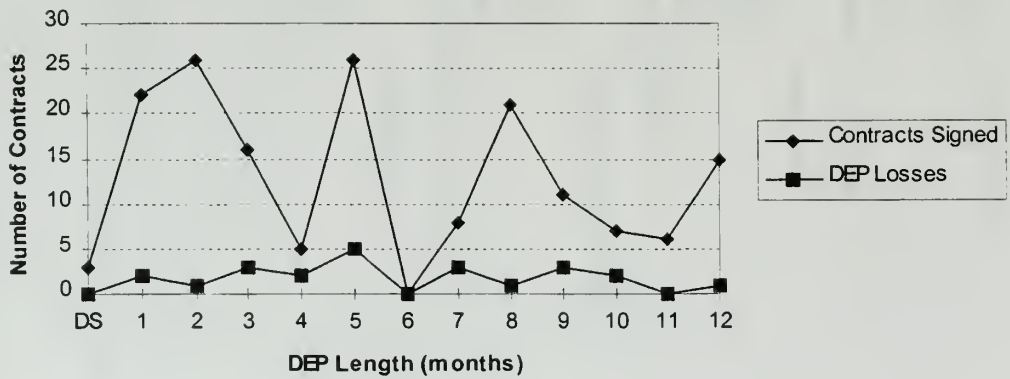
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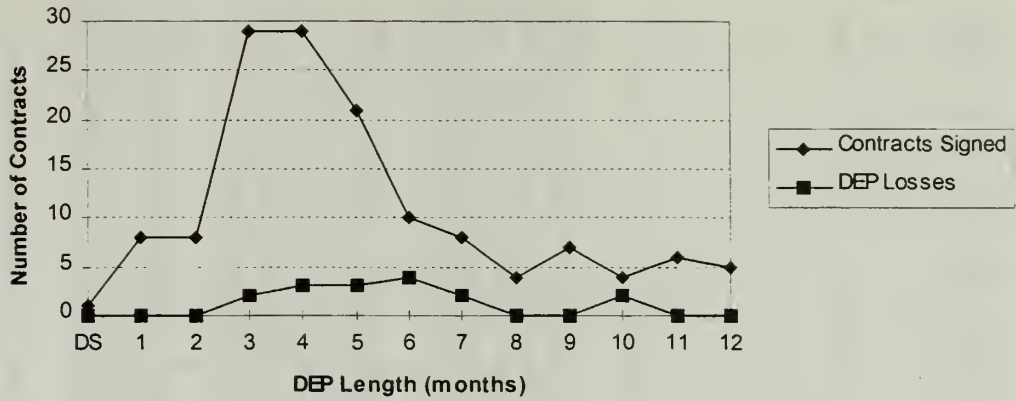
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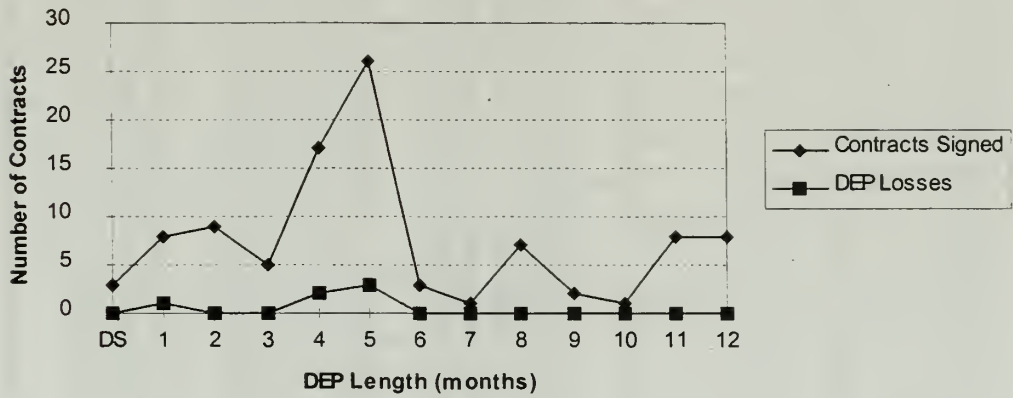
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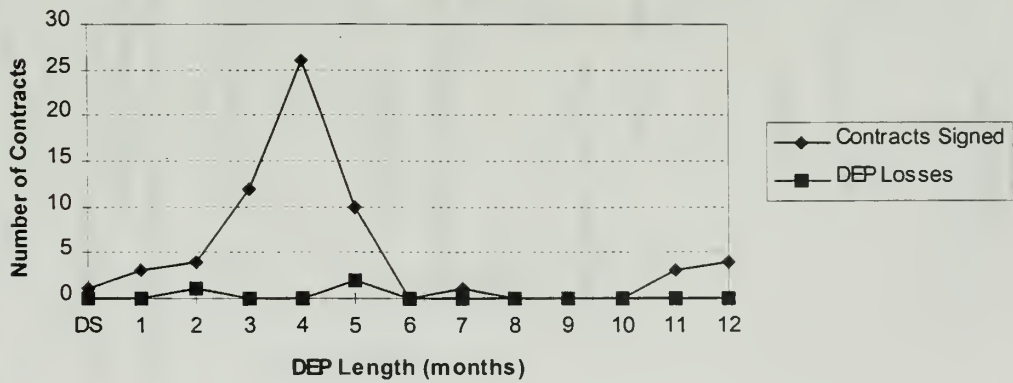
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November Work Force (WF) Contracts

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	7	13	16	22	17	17	17	1	2	15	10	11	14	162
FY 92	7	8	12	8	14	22	14	8	22	17	21	12	9	174
FY 93	9	3	4	9	12	19	33	5	2	3	6	3	0	108
FY 94	5	5	4	9	20	26	25	2	1	4	3	0	0	104
Total FY91-94 Contracts	28	29	36	48	63	84	89	16	27	39	40	26	23	548

DEP Length (months)

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	2	0	0	2	6	1	0	0	1	4	3	2	4	25
FY 92	2	1	0	1	1	2	2	1	2	1	1	2	1	17
FY 93	1	0	1	1	0	1	5	1	1	1	1	0	0	13
FY 94	1	1	0	2	1	4	4	0	1	0	1	0	0	15
Total DEP Losses	6	2	1	6	8	8	11	2	5	6	6	4	5	70

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0432	0.0802	0.0988	0.1358	0.1049	0.1049	0.1049	0.0062	0.0123	0.0926	0.0617	0.0679	0.0864	1.0000
FY 92	0.0402	0.0460	0.0690	0.0460	0.0805	0.1264	0.0805	0.0460	0.1264	0.0977	0.1207	0.0690	0.0517	1.0000
FY 93	0.0833	0.0278	0.0370	0.0833	0.1111	0.1759	0.3056	0.0463	0.0185	0.0278	0.0556	0.0278	0.0000	1.0000
FY 94	0.0481	0.0481	0.0385	0.0865	0.1923	0.2500	0.2404	0.0192	0.0096	0.0385	0.0288	0.0000	0.0000	1.0000
Average DEP Length Distribution	0.0511	0.0529	0.0657	0.0876	0.1150	0.1533	0.1624	0.0292	0.0493	0.0712	0.0730	0.0474	0.0420	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.2857	0.0000	0.0000	0.0909	0.3529	0.0588	0.0000	0.0000	0.5000	0.2667	0.3000	0.1818	0.2857	0.1543
FY 92	0.2857	0.1250	0.0000	0.1250	0.0714	0.0909	0.1429	0.1250	0.0909	0.0588	0.0476	0.1667	0.1111	0.0977
FY 93	0.1111	0.0000	0.2500	0.1111	0.0000	0.0526	0.1515	0.2000	0.5000	0.3333	0.1667	0.0000	0.0000	0.1204
FY 94	0.2000	0.2000	0.0000	0.2222	0.0500	0.1538	0.1600	0.0000	1.0000	0.0000	0.3333	0.0000	0.0000	0.1442
Average Prob[DEP Loss]	0.2143	0.0690	0.0278	0.1250	0.1270	0.0952	0.1236	0.1250	0.1852	0.1538	0.1500	0.1538	0.2174	0.1277

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.3663	0.1612	0.0815	0.2186	0.2092	0.1580	0.1920	0.2871	0.3317	0.2671	0.2607	0.2925	0.3860	0.1557
Average Prob[DEP Loss]	0.2143	0.0690	0.0278	0.1250	0.1270	0.0952	0.1236	0.1250	0.1852	0.1538	0.1500	0.1538	0.2174	0.1277
95 % CI Lower Bound for Prob[DEP Loss]	0.0623	0.0000	0.0000	0.0314	0.0448	0.0325	0.0552	0.0000	0.0387	0.0406	0.0393	0.0152	0.0488	0.0998

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

## Average FY91-94 November WF Contracts
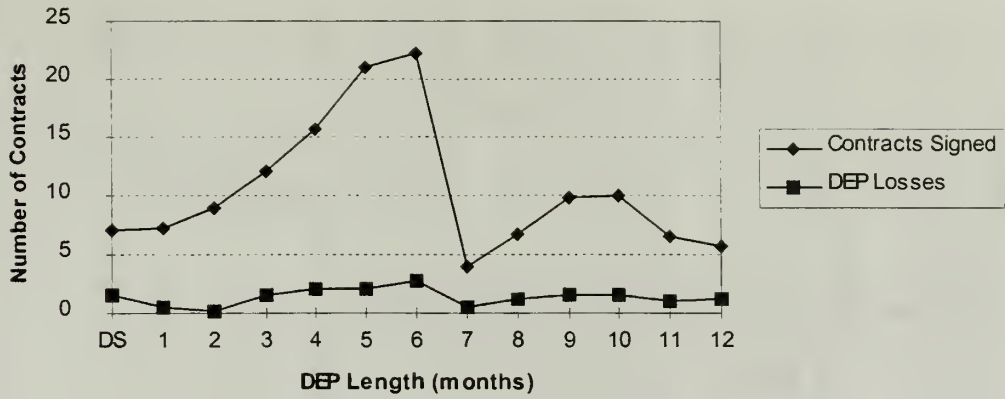
Total FY91-94 November WF Contracts
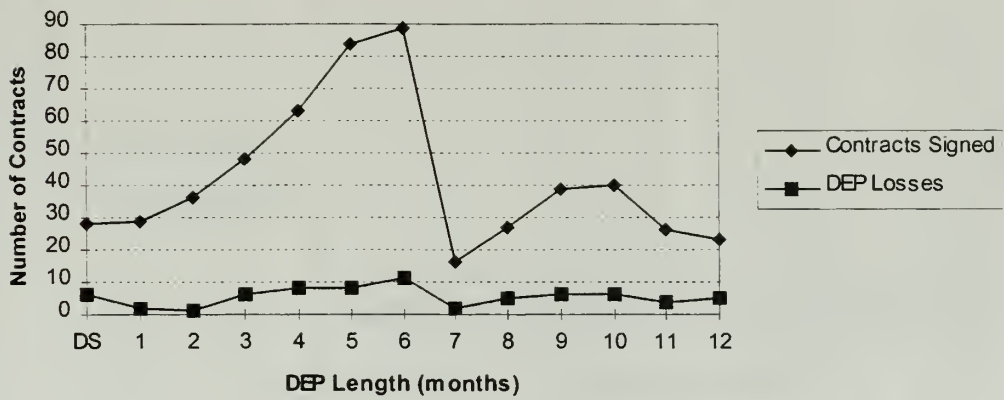
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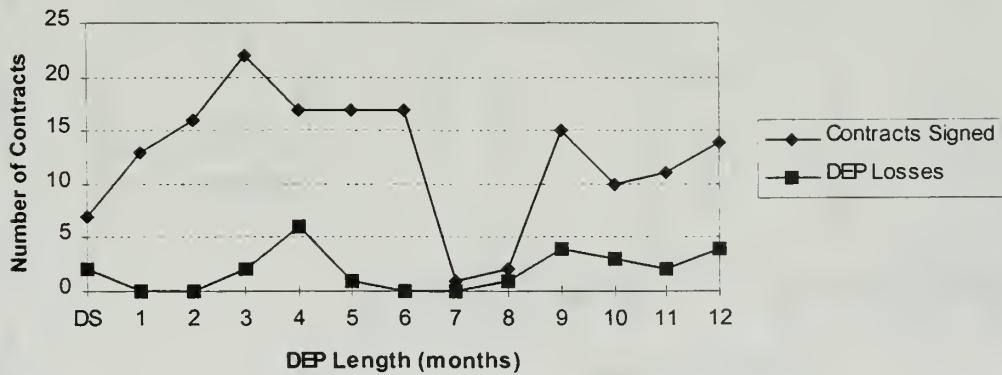
FY92 November WF Contracts
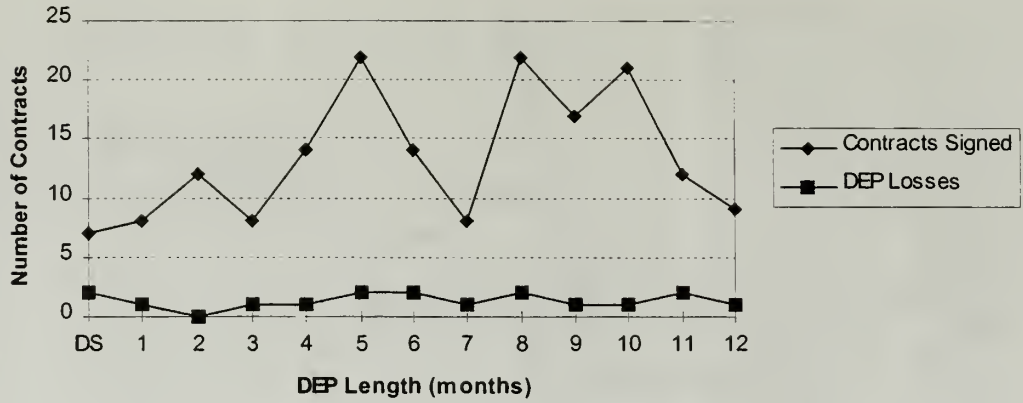
FY93 November WF Contracts
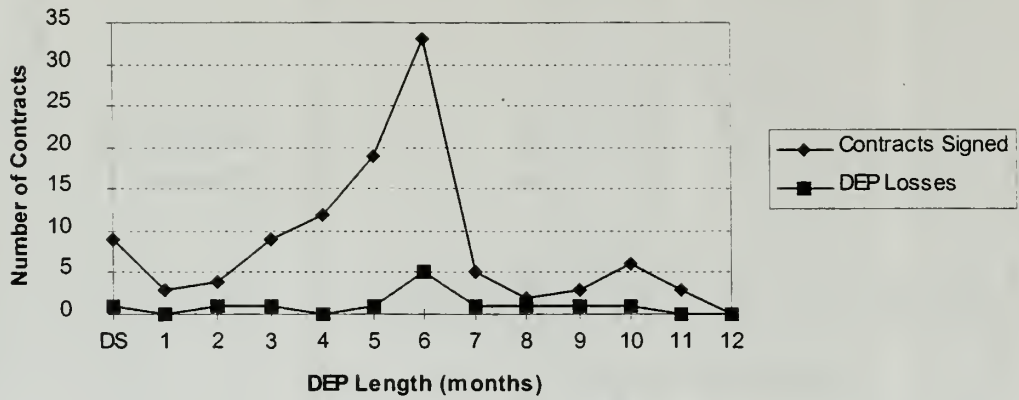
FY94 November WF Contracts

December Work Force (WF) Contracts

DEP Length (months)

Contracts Signed

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	15	20	12	11	27	13	0	2	5	13	10	14	4	146
FY 92	5	14	15	18	52	42	12	4	6	5	10	2	0	185
FY 93	8	5	5	8	12	18	4	8	3	5	11	10	0	97
FY 94	5	5	4	9	18	28	6	3	3	2	3	0	4	86
Total FY91-94 Contracts	33	44	36	46	109	101	22	17	17	25	34	26	4	514

DEP Losses

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	1	2	1	0	3	5	0	0	1	3	0	2	1	19
FY 92	0	1	1	3	6	5	4	0	0	1	2	0	0	23
FY 93	0	2	0	0	2	4	0	0	1	0	0	2	0	11
FY 94	0	0	0	0	2	1	1	2	0	1	1	0	1	8
Total DEP Losses	1	5	2	3	13	15	5	2	2	5	3	4	1	61

DEP Length Distribution

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.1027	0.1370	0.0822	0.0753	0.1849	0.0890	0.0000	0.0137	0.0342	0.0890	0.0685	0.0959	0.0274	1.0000
FY 92	0.0270	0.0757	0.0811	0.0973	0.2811	0.2270	0.0649	0.0216	0.0324	0.0270	0.0541	0.0108	0.0000	1.0000
FY 93	0.0825	0.0515	0.0515	0.0825	0.1237	0.1856	0.0412	0.0825	0.0309	0.0515	0.1134	0.1031	0.0000	1.0000
FY 94	0.0581	0.0581	0.0465	0.1047	0.2093	0.3256	0.0698	0.0349	0.0349	0.0233	0.0349	0.0000	0.0000	1.0000
Average DEP Length Distribution	0.0642	0.0856	0.0700	0.0895	0.2121	0.1965	0.0428	0.0331	0.0331	0.0486	0.0661	0.0506	0.0078	1.0000

Prob[DEP Loss]

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
FY 91	0.0667	0.1000	0.0833	0.0000	0.1111	0.3846	0.0000	0.0000	0.2000	0.2308	0.0000	0.1429	0.2500	0.1301
FY 92	0.0000	0.0714	0.0667	0.1667	0.1154	0.1190	0.3333	0.0000	0.0000	0.2000	0.2000	0.0000	0.0000	0.1243
FY 93	0.0000	0.4000	0.0000	0.0000	0.1667	0.2222	0.0000	0.0000	0.3333	0.0000	0.0000	0.2000	0.0000	0.1134
FY 94	0.0000	0.0000	0.0000	0.0000	0.1111	0.0357	0.1667	0.6667	0.0000	0.5000	0.3333	0.0000	0.0000	0.0930
Average Prob[DEP Loss]	0.0303	0.1136	0.0556	0.0652	0.1193	0.1485	0.2273	0.1176	0.1176	0.2000	0.0882	0.1538	0.2500	0.1187

	DS	1	2	3	4	5	6	7	8	9	10	11	12	Total
95 % CI Upper Bound for Prob[DEP Loss]	0.0888	0.2074	0.1304	0.1366	0.1801	0.2179	0.4024	0.2708	0.2708	0.3568	0.1836	0.2925	0.6744	0.1466
Average Prob[DEP Loss]	0.0303	0.1136	0.0556	0.0652	0.1193	0.1485	0.2273	0.1176	0.1176	0.2000	0.0882	0.1538	0.2500	0.1187
95 % CI Lower Bound for Prob[DEP Loss]	0.0000	0.0199	0.0000	0.0000	0.0584	0.0792	0.0522	0.0000	0.0000	0.0432	0.0000	0.0152	0.0000	0.0907

NOTE: DS represents Direct Shippers. DS recruits are shipped to recruit training during the contract signing month.

## Average FY91-94 December WF Contracts
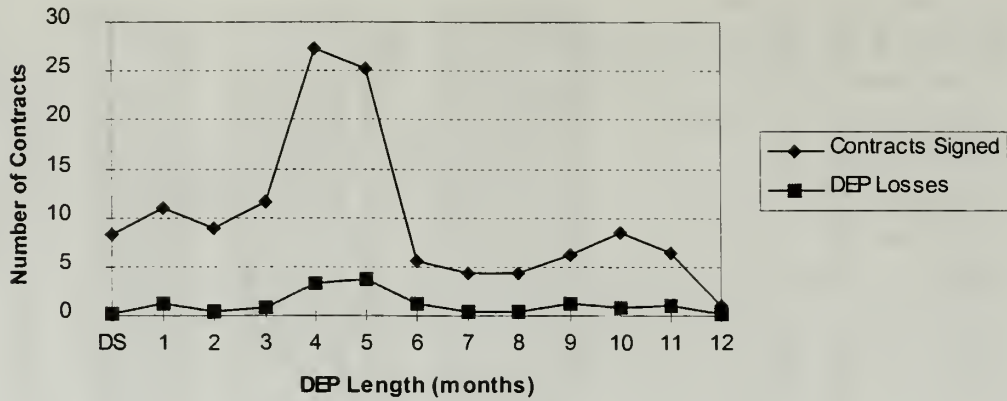
Total FY91-94 December WF Contracts
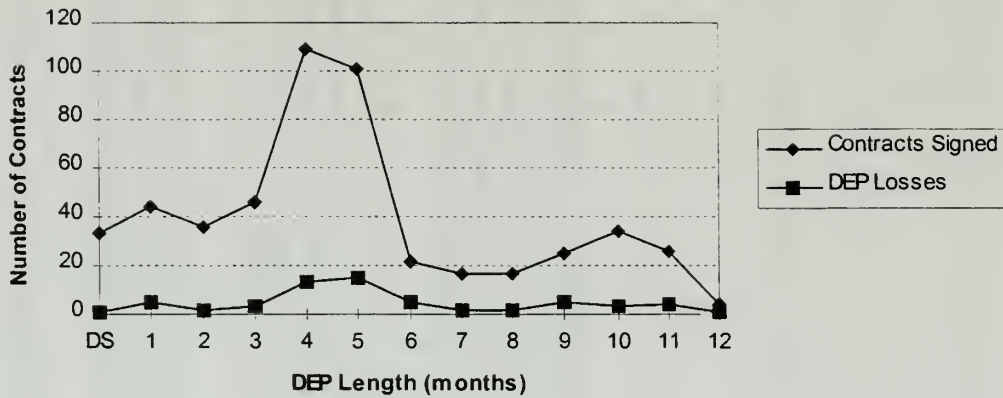
FY91 December WF Contracts
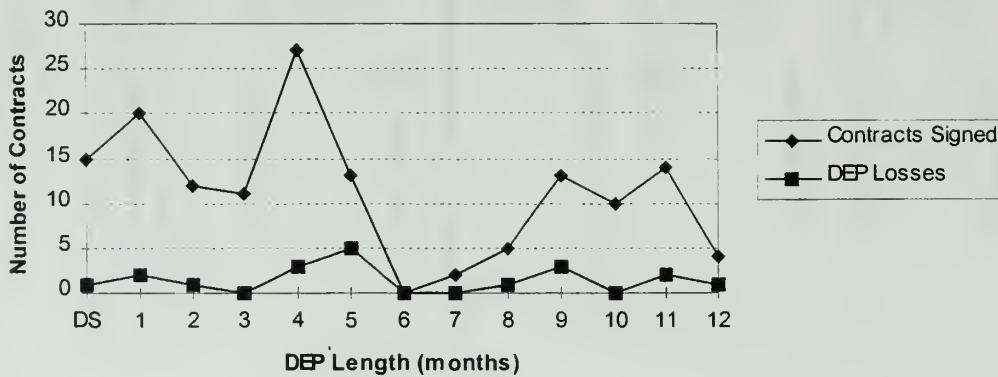
FY92 December WF Contracts
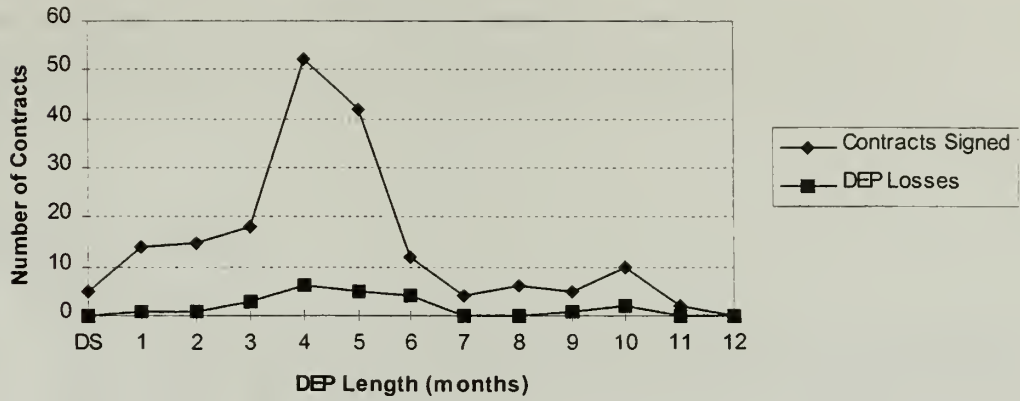
FY93 December WF Contracts
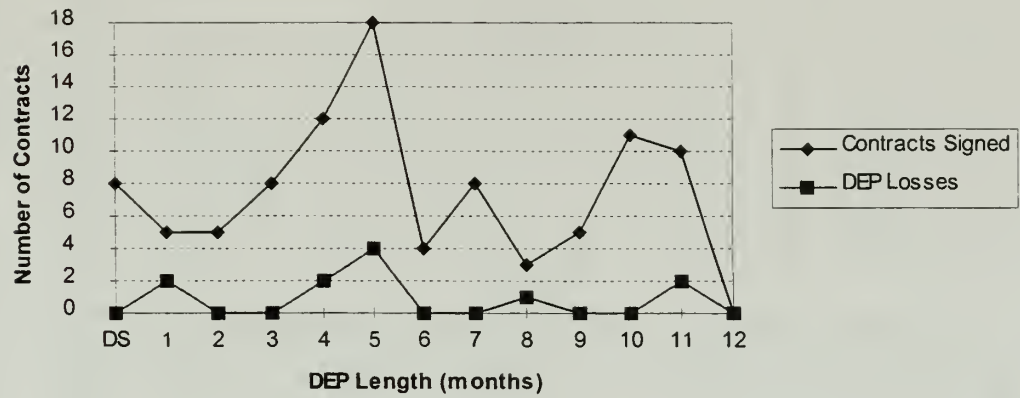
FY94 December WF Contracts
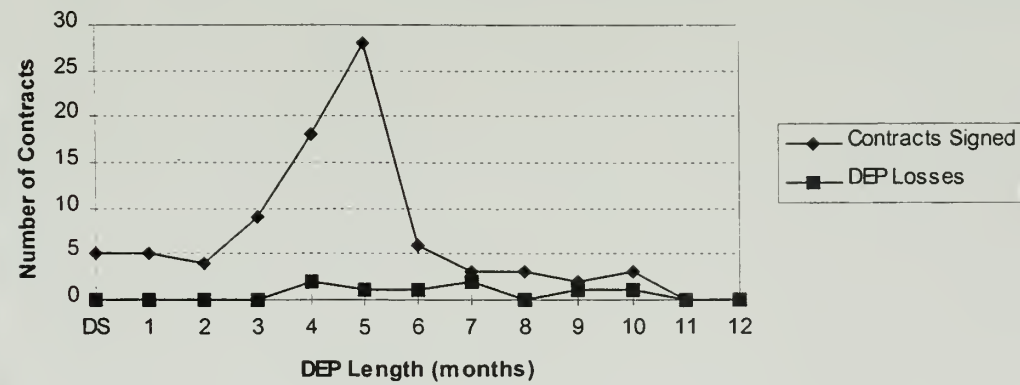
APPENDIX B. DEP PLACEMENT MODEL RESULTS

The DEP placement strategies for five scenarios are provided in Appendix B. The baseline scenario is the FY1996 New Contract Objective (NCO) for nuclear field recruits. For the remaining four scenarios, the NCO was uniformly increased by 5 %.

Scenario #1: Baseline

FY 1996 NCO: 1.00
Objective Function: 24052.847

HS Contracts — Accession Months

	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
OCT FY1	0	0	0	0	0	0	0	0	0	0	0.372	0
NOV FY1	0	0	0	0	0	0	0	0	0	0.196	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0.371	0	0
JAN FY1	0	0	0	0	0	0	0	0	0	0	0	0
FEB FY1	0	0	0	0	0	0	0	0	0	0	0	0
MAR FY1	0	0	0	0	0	0	0	0	0	0	0	0
APR FY1	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY1	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY1	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY1	0	0	0	0	0	0	0	0	0	0	0	0

HS Contracts — Accession Months

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY1	0	0	0	0	0	0	0	0	0	0	0	0
NOV FY1	0.254	0	0	0	0	0	0	0	0	0	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0	0	0
JAN FY1	0.372	0	0	0	0	0	0	0	0	0	0	0
FEB FY1	0	0.368	0	0	0	0	0	0	0	0	0	0
MAR FY1	0	0.372	0	0	0	0	0	0	0	0	0	0
APR FY1	0.212	0	0.156	0	0	0	0	0	0	0	0	0
MAY FY1	0	0.369	0	0	0	0	0	0	0	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0.383	0	0	0
JUL FY1	0	0	0	0	0	0	0	0	0.268	0.116	0	0
AUG FY1	0	0	0	0	0	0	0	0	0	0.18	0.204	0
SEP FY1	0	0	0	0	0	0	0	0	0.382	0	0	0

HS Contracts — Accession Months

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY2	0	0	0	0	0	0	0	0	0	0	0.367	0
NOV FY2	0	0	0	0	0	0	0	0	0	0.45	0	0
DEC FY2	0	0	0	0	0	0	0	0	0	0.371	0	0
JAN FY2	0	0	0	0	0	0	0	0	0	0	0.11	0.262
FEB FY2	0	0	0	0	0	0	0	0	0	0	0	0.368
MAR FY2	0	0	0	0	0	0	0	0	0	0	0	0
APR FY2	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY2	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY2	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY2	0	0	0	0	0	0	0	0	0	0	0	0

Scenario #1: Baseline   (continued)

FY 1996 NCO: 1.00
Objective Function: 24052.847

WF Contracts — Accession Months

	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
OCT FY1	0	0.188	0	0	0	0	0	0	0.111	0	0	0.156
NOV FY1	0	0	0.192	0.335	0	0	0.023	0	0	0	0	0
DEC FY1	0	0	0	0	0.414	0.04	0	0	0	0	0	0
JAN FY1	0	0	0	0	0	0.455	0	0	0	0	0	0
FEB FY1	0	0	0	0	0	0	0.185	0	0	0	0.015	0
MAR FY1	0	0	0	0	0	0	0	0.455	0	0	0	0
APR FY1	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY1	0	0	0	0	0	0	0	0	0.451	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0	0	0	0.468
JUL FY1	0	0	0	0	0	0	0	0	0	0	0.469	0
AUG FY1	0	0	0	0	0	0	0	0	0	0	0	0.056
SEP FY1	0	0	0	0	0	0	0	0	0	0	0	0

WF Contracts — Accession Months

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY1	0	0	0	0	0	0	0	0	0	0	0	0
NOV FY1	0	0	0	0	0	0	0	0	0	0	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0	0	0
JAN FY1	0	0	0	0	0	0	0	0	0	0	0	0
FEB FY1	0	0	0	0	0.249	0	0	0	0	0	0	0
MAR FY1	0	0	0	0	0	0	0	0	0	0	0	0
APR FY1	0	0	0	0	0	0	0.45	0	0	0	0	0
MAY FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY1	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY1	0	0	0	0.403	0	0	0	0	0	0	0	0
SEP FY1	0	0.01	0	0	0.458	0	0	0	0	0	0	0

WF Contracts — Accession Months

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY2	0	0	0.063	0	0	0	0	0	0	0	0	0.385
NOV FY2	0	0	0.148	0.402	0	0	0	0	0	0	0	0
DEC FY2	0	0	0	0	0	0.454	0	0	0	0	0	0
JAN FY2	0	0	0	0	0	0.455	0	0	0	0	0	0
FEB FY2	0	0	0	0	0	0	0	0	0	0	0.45	0
MAR FY2	0	0	0	0	0	0	0	0	0	0	0	0
APR FY2	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY2	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY2	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY2	0	0	0	0	0	0	0	0	0	0	0	0

Direct Shippers — Accession Months

	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
1st increment	0.092	0	0.087	0.087	0.091	0.087	0.091	0.09	0.074	0.074	0.073	0.075
2nd increment	0.08	0	0.087	0.087	0.091	0.087	0.091	0.09	0.074	0.074	0.073	0.075

— Accession Months

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
1st increment	0.092	0	0.087	0.087	0.091	0.087	0.091	0.09	0.074	0.074	0.073	0.075
2nd increment	0.092	0	0.087	0.087	0.091	0.087	0.091	0.09	0.074	0.074	0.073	0.075

Accession Deficit — Accession Months

OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
0	0	0	0	0	72.299	149.91	92.167	0	0	0	0

— Accession Months

OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
0	0	141.233	0	0	1.715	93.25	241.109	0	0	0	0

Total Deficit 791.683

Expected Number of Accessions — Accession Months

OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
259.287	259.779	285.453	294.339	266.214	220.465	121.185	198.941	315.246	325.633	323.1	283.035

— Accession Months

OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
258.021	260.761	139.911	290.46	262.571	291.291	173.75	47.45	319.735	326.802	325.79	290.179

Standard Deviation — Accession Months

OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
5.646	5.944	5.746	5.069	4.993	4.112	2.489	3.105	5.013	5.856	4.316	1.237

— Accession Months

OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
4.876	6.542	3.127	2.711	2.779	4.259	0	1.556	7.742	6.566	5.951	5.58

Scenario #2: 105 % of FY1996 NCO

FY1996 NCO: 1.05
Objective Function: 201019.676

HS Contracts — Accession Months

	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
OCT FY1	0	0	0	0	0	0	0	0	0	0.044	0.332	0
NOV FY1	0	0	0	0	0	0	0	0	0	0.122	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0.375	0	0
JAN FY1	0	0	0	0	0	0	0	0	0	0	0	0
FEB FY1	0	0	0	0	0	0	0	0	0	0	0	0
MAR FY1	0	0	0	0	0	0	0	0	0	0	0	0
APR FY1	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY1	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY1	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY1	0	0	0	0	0	0	0	0	0	0	0	0

HS Contracts — Accession Months

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY1	0	0	0	0	0	0	0	0	0	0	0	0
NOV FY1	0.328	0	0	0	0	0	0	0	0	0	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0	0	0
JAN FY1	0.376	0	0	0	0	0	0	0	0	0	0	0
FEB FY1	0	0	0.372	0	0	0	0	0	0	0	0	0
MAR FY1	0	0.376	0	0	0	0	0	0	0	0	0	0
APR FY1	0.102	0	0.27	0	0	0	0	0	0	0	0	0
MAY FY1	0	0.373	0	0	0	0	0	0	0	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0.386	0	0	0
JUL FY1	0	0	0	0	0	0	0	0	0.21	0.177	0	0
AUG FY1	0	0	0	0	0	0	0	0	0	0.055	0.332	0
SEP FY1	0	0	0	0	0	0	0	0	0.386	0	0	0

HS Contracts — Accession Months

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY2	0	0	0	0	0	0	0	0	0	0	0.371	0
NOV FY2	0	0	0	0	0	0	0	0	0	0.45	0	0
DEC FY2	0	0	0	0	0	0	0	0	0	0.375	0	0
JAN FY2	0	0	0	0	0	0	0	0	0	0	0	0.375
FEB FY2	0	0	0	0	0	0	0	0	0	0	0	0.372
MAR FY2	0	0	0	0	0	0	0	0	0	0	0	0
APR FY2	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY2	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY2	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY2	0	0	0	0	0	0	0	0	0	0	0	0

WF Contracts — Accession Months

	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
OCT FY1	0	0.179	0.146	0	0	0	0	0	0.079	0	0	0.055
NOV FY1	0	0	0.034	0.319	0	0	0.197	0	0	0	0	0
DEC FY1	0	0	0	0	0.395	0.064	0	0	0	0	0	0
JAN FY1	0	0	0	0	0	0.459	0	0	0	0	0	0
FEB FY1	0	0	0	0	0	0	0.028	0	0	0	0	0
MAR FY1	0	0	0	0	0	0	0	0.459	0	0	0	0
APR FY1	0	0	0	0	0	0	0	0.293	0	0	0	0
MAY FY1	0	0	0	0	0	0	0	0	0.455	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0	0	0	0.472
JUL FY1	0	0	0	0	0	0	0	0	0	0	0.473	0
AUG FY1	0	0	0	0	0	0	0	0	0	0	0	0.112
SEP FY1	0	0	0	0	0	0	0	0	0	0	0	0

WF Contracts — Accession Months

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY1	0	0	0	0	0	0	0	0	0	0	0	0
NOV FY1	0	0	0	0	0	0	0	0	0	0	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0	0	0
JAN FY1	0	0	0	0	0	0	0	0	0	0	0	0
FEB FY1	0	0	0	0	0.426	0	0	0	0	0	0	0
MAR FY1	0	0	0	0	0	0	0	0	0	0	0	0
APR FY1	0	0	0	0	0	0	0.162	0	0	0	0	0
MAY FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY1	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY1	0	0	0	0.361	0	0	0	0	0	0	0	0
SEP FY1	0	0.198	0	0	0.273	0	0	0	0	0	0	0

Scenario #2: 105 % of FY1996 NCO (continued)

FY1996 NCO: 1.05
Objective Function: 201019.676

WF Contracts — Accession Months

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY2	0	0	0.205	0	0	0	0	0	0	0	0	0.249
NOV FY2	0	0	0.139	0.411	0	0	0	0	0	0	0	0
DEC FY2	0	0	0	0	0	0.458	0	0	0	0	0	0
JAN FY2	0	0	0	0	0	0.413	0.046	0	0	0	0	0
FEB FY2	0	0	0	0	0	0	0.069	0	0	0	0.386	0
MAR FY2	0	0	0	0	0	0	0	0	0	0	0	0
APR FY2	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY2	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY2	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY2	0	0	0	0	0	0	0	0	0	0	0	0

Direct Shippers — Accession Months

OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
0.088	0	0.083	0.083	0.087	0.082	0.087	0.085	0.071	0.07	0.07	0.072
0.077	0	0.083	0.083	0.087	0.082	0.087	0.086	0.071	0.07	0.07	0.072

Accession Months

OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
0.088	0	0.083	0.083	0.087	0.082	0.087	0.086	0.071	0.07	0.07	0.072
0.088	0	0.083	0.083	0.087	0.082	0.087	0.086	0.071	0.07	0.07	0.072

Accession Deficit — Accession Months

OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
0	0	0	0	0	57.791	144.769	0	0	0	0	0

Accession Months

OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
0	0	0	0	0	0	141.264	241.109	0	0	0	0

Total Deficit
584.933

Expected Number of Accessions — Accession Months

OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
259.287	259.779	285.3	294.339	266.214	235.172	126.897	291.166	315.263	325.64	322.918	283.035

Accession Months

OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
258.341	258.812	286.031	290.448	261.97	293.021	128.182	47.45	319.672	326.413	326.652	291.224

Standard Deviation — Accession Months

OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
5.646	5.944	5.653	5.069	4.993	4.232	2.837	3.14	5.023	5.86	4.205	1.237

Accession Months

OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
5.071	5.357	6.098	2.704	2.414	4.268	1.487	1.556	7.703	6.33	6.475	6.215

Scenario #3: 110 % of FY1996 NCO

FY1996 NCO: 1.10
Objective Function: 14249.697

HS Contracts — Accession Months

	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
OCT FY1	0	0	0	0	0	0	0	0	0	0.087	0.292	0
NOV FY1	0	0	0	0	0	0	0	0	0	0.051	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0.378	0	0
JAN FY1	0	0	0	0	0	0	0	0	0	0	0	0
FEB FY1	0	0	0	0	0	0	0	0	0	0	0	0
MAR FY1	0	0	0	0	0	0	0	0	0	0	0	0
APR FY1	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY1	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY1	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY1	0	0	0	0	0	0	0	0	0	0	0	0

HS Contracts — Accession Months

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY1	0	0	0	0	0	0	0	0	0	0	0	0
NOV FY1	0.399	0	0	0	0	0	0	0	0	0	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0	0	0
JAN FY1	0.379	0	0	0	0	0	0	0	0	0	0	0
FEB FY1	0	0.375	0	0	0	0	0	0	0	0	0	0
MAR FY1	0	0.379	0	0	0	0	0	0	0	0	0	0
APR FY1	0	0	0.376	0	0	0	0	0	0	0	0	0
MAY FY1	0	0.261	0	0	0	0	0.115	0	0	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0.389	0	0	0
JUL FY1	0	0	0	0	0	0	0	0	0.158	0.232	0	0
AUG FY1	0	0	0	0	0	0	0	0	0	0	0.39	0
SEP FY1	0	0	0	0	0	0	0	0	0.389	0	0	0

FY1996 NCO: 1.10
Objective Function: 14249.697

HS Contracts

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
						Accession Months						
OCT FY2	0	0	0	0	0	0	0	0	0	0	0.375	0
NOV FY2	0	0	0	0	0	0	0	0	0	0.391	0.059	0
DEC FY2	0	0	0	0	0	0	0	0	0	0.378	0	0
JAN FY2	0	0	0	0	0	0	0	0	0	0	0	0.379
FEB FY2	0	0	0	0	0	0	0	0	0	0	0	0.375
MAR FY2	0	0	0	0	0	0	0	0	0	0	0	0
APR FY2	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY2	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY2	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY2	0	0	0	0	0	0	0	0	0	0	0	0

WF Contracts

	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
						Accession Months						
OCT FY1	0	0.171	0.171	0	0.007	0	0	0	0.05	0	0	0.064
NOV FY1	0	0	0	0.305	0	0	0.245	0	0	0	0	0
DEC FY1	0	0	0	0	0.371	0.092	0	0	0	0	0	0
JAN FY1	0	0	0	0	0	0.463	0	0	0	0	0	0
FEB FY1	0	0	0	0	0	0	0.301	0	0	0	0	0
MAR FY1	0	0	0	0	0	0	0	0	0.463	0	0	0
APR FY1	0	0	0	0	0	0	0	0.254	0	0	0	0
MAY FY1	0	0	0	0	0	0	0	0	0.46	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0	0	0	0.476
JUL FY1	0	0	0	0	0	0	0	0	0	0	0.467	0
AUG FY1	0	0	0	0	0	0	0	0	0	0	0	0.073
SEP FY1	0	0	0	0	0	0	0	0	0	0	0	0

WF Contracts

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
						Accession Months						
OCT FY1	0	0	0	0	0	0	0	0	0	0	0	0
NOV FY1	0	0	0	0	0	0	0	0	0	0	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0	0	0
JAN FY1	0	0	0	0	0	0	0	0	0	0	0	0
FEB FY1	0	0	0	0	0.158	0	0	0	0	0	0	0
MAR FY1	0	0	0	0	0	0	0	0	0	0	0	0
APR FY1	0	0	0	0	0	0	0.205	0	0	0	0	0
MAY FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY1	0	0.01	0	0	0	0	0	0	0	0	0	0
AUG FY1	0	0	0	0.404	0	0	0	0	0	0	0	0
SEP FY1	0	0	0	0	0.475	0	0	0	0	0	0	0

WF Contracts

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
						Accession Months						
OCT FY2	0	0	0.252	0	0	0	0	0	0	0	0	0.205
NOV FY2	0	0	0.231	0.319	0	0	0	0	0	0	0	0
DEC FY2	0	0	0	0	0	0.463	0	0	0	0	0	0
JAN FY2	0	0	0	0	0	0.369	0.094	0	0	0	0	0
FEB FY2	0	0	0	0	0	0	0.211	0	0	0	0.248	0
MAR FY2	0	0	0	0	0	0	0	0	0	0	0	0
APR FY2	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY2	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY2	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY2	0	0	0	0	0	0	0	0	0	0	0	0

Direct Shippers

OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
				Accession Months							
0.084	0	0.079	0.079	0.083	0.079	0.083	0.082	0.067	0.067	0.067	0.068
0.073	0	0.079	0.079	0.083	0.079	0.083	0.082	0.067	0.067	0.067	0.068

OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
				Accession Months							
0.084	0	0.079	0.079	0.083	0.079	0.083	0.082	0.067	0.067	0.067	0.068
0.084	0	0.079	0.079	0.083	0.079	0.083	0.082	0.067	0.067	0.067	0.068

Accession Deficit

OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
				Accession Months							
0	0	0	0	0	41.538	53.287	0	0	0	0	0

OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
				Accession Months							
0	0	0	0	0	0	43.804	241.109	0	0	0	0

Total Deficit
379.738

Expected Number of Accessions

OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
				Accession Months							
259.287	259.779	285.264	294.339	266.224	251.639	219.951	291.224	315.28	325.65	322.709	283.035

OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
				Accession Months							
258.657	261.015	283.762	290.48	262.778	293.012	228.531	47.45	319.608	326.327	327.843	291.513

FY1996 NCO: 1.10
Objective Function: 14249.697

Standard Deviation					Accession Months						
OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
5.646	5.944	5.632	5.069	4.999	4.363	3.792	3.175	5.034	5.866	4.078	1.237

					Accession Months						
OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
5.263	6.696	4.719	2.724	2.905	4.263	3.244	1.556	7.665	6.278	7.199	6.391

Scenario #4: 115 % of FY1996 NCO

FY1996 NCO: 1.15
Objective Function: 9479.403

HS Contracts

	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
OCT FY1	0	0	0	0	0	0	0	0	0	0	0.382	0
NOV FY1	0	0	0	0	0	0	0	0	0	0.105	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0.382	0	0
JAN FY1	0	0	0	0	0	0	0	0	0	0	0	0
FEB FY1	0	0	0	0	0	0	0	0	0	0	0	0
MAR FY1	0	0	0	0	0	0	0	0	0	0	0	0
APR FY1	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY1	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY1	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY1	0	0	0	0	0	0	0	0	0	0	0	0

HS Contracts

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY1	0	0	0	0	0	0	0	0	0	0	0	0
NOV FY1	0.345	0	0	0	0	0	0	0	0	0	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0	0	0
JAN FY1	0.382	0	0	0	0	0	0	0	0	0	0	0
FEB FY1	0	0.379	0	0	0	0	0	0	0	0	0	0
MAR FY1	0	0.382	0	0	0	0	0	0	0	0	0	0
APR FY1	0.013	0	0.365	0	0	0	0	0	0	0	0	0
MAY FY1	0	0.227	0	0	0	0	0.152	0	0	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0.392	0	0	0
JUL FY1	0	0	0	0	0	0	0	0	0.11	0.283	0	0
AUG FY1	0	0	0	0	0	0	0	0	0	0	0.393	0
SEP FY1	0	0	0	0	0	0	0	0	0.391	0	0	0

HS Contracts

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY2	0	0	0	0	0	0	0	0	0	0	0.378	0
NOV FY2	0	0	0	0	0	0	0	0	0	0.287	0.163	0
DEC FY2	0	0	0	0	0	0	0	0	0	0.382	0	0
JAN FY2	0	0	0	0	0	0	0	0	0	0	0.1	0.282
FEB FY2	0	0	0	0	0	0	0	0	0	0	0	0.379
MAR FY2	0	0	0	0	0	0	0	0	0	0	0	0
APR FY2	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY2	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY2	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY2	0	0	0	0	0	0	0	0	0	0	0	0

WF Contracts

	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
OCT FY1	0	0.164	0.164	0	0.116	0	0	0	0.024	0	0	0
NOV FY1	0	0	0	0.292	0	0	0.258	0	0	0	0	0
DEC FY1	0	0	0	0	0.255	0.211	0	0	0	0	0	0
JAN FY1	0	0	0	0	0	0.457	0.01	0	0	0	0	0
FEB FY1	0	0	0	0	0	0	0.339	0	0	0	0	0
MAR FY1	0	0	0	0	0	0	0.092	0.376	0	0	0	0
APR FY1	0	0	0	0	0	0	0	0.312	0	0	0	0
MAY FY1	0	0	0	0	0	0	0	0	0.464	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0	0	0	0.479
JUL FY1	0	0	0	0	0	0	0	0	0	0	0.381	0
AUG FY1	0	0	0	0	0	0	0	0	0	0	0	0.095
SEP FY1	0	0	0	0	0	0	0	0	0	0	0	0

Scenario #4: 115 % of FY1996 NCO (continued)

FY1996 NCO: 1.15
Objective Function: 9479.403

WF Contracts

| | Accession Months | | | | | | | | | | | |
	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY1	0	0	0	0	0	0	0	0	0	0	0	0
NOV FY1	0	0	0	0	0	0	0	0	0	0	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0	0	0
JAN FY1	0	0	0	0	0	0	0	0	0	0	0	0
FEB FY1	0	0	0	0	0.123	0	0	0	0	0	0	0
MAR FY1	0	0	0	0	0	0	0	0	0	0	0	0
APR FY1	0	0	0	0	0	0	0.151	0	0	0	0	0
MAY FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY1	0	0	0	0	0	0	0	0.098	0	0	0	0
AUG FY1	0	0	0	0.385	0	0	0	0	0	0	0	0
SEP FY1	0	0	0	0	0.478	0	0	0	0	0	0	0

WF Contracts

| | Accession Months | | | | | | | | | | | |
	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY2	0	0	0.214	0	0	0	0	0	0	0	0	0.248
NOV FY2	0	0	0.243	0.307	0	0	0	0	0	0	0	0
DEC FY2	0	0	0	0	0	0.466	0	0	0	0	0	0
JAN FY2	0	0	0	0	0	0.329	0.138	0	0	0	0	0
FEB FY2	0	0	0	0	0	0	0.314	0.107	0	0	0.042	0
MAR FY2	0	0	0	0	0	0	0	0	0	0	0	0
APR FY2	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY2	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY2	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY2	0	0	0	0	0	0	0	0	0	0	0	0

Direct Shippers

| Accession Months | | | | | | | | | | | |
OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
0.08	0	0.076	0.075	0.079	0.075	0.079	0.078	0.065	0.064	0.064	0.065
0.07	0	0.076	0.075	0.079	0.075	0.079	0.078	0.065	0.064	0.064	0.065

| Accession Months | | | | | | | | | | | |
OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
0.08	0	0.076	0.075	0.079	0.075	0.079	0.078	0.065	0.064	0.064	0.065
0.08	0	0.076	0.075	0.079	0.075	0.079	0.078	0.065	0.064	0.064	0.065

Accession Deficit

| Accession Months | | | | | | | | | | | |
OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
0	0	0	0	0	0	0	0	0	0	0	0

| Accession Months | | | | | | | | | | | |
OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
0	0	0	0	0	0	0	179.01	0	0	0	0

Total Deficit
179.01

Expected Number of Accessions

| Accession Months | | | | | | | | | | | |
OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
259.287	259.779	285.264	294.339	266.404	293.681	273.957	291.059	315.297	325.475	323.591	283.035

| Accession Months | | | | | | | | | | | |
OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
258.579	261.163	283.82	290.48	262.864	293.003	273.485	111.958	319.545	326.521	329.325	291.075

Standard Deviation

| Accession Months | | | | | | | | | | | |
OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
5.646	5.944	5.632	5.069	5.109	4.669	4.229	3.075	5.044	5.76	4.614	1.237

| Accession Months | | | | | | | | | | | |
OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
5.215	6.786	4.754	2.723	2.957	4.257	3.942	3.02	7.626	6.396	8.1	6.125

Scenario #5: 120 % of FY1996 CO

FY1996 NCO: 1.2
Objective Function: 5143.066

HS Contracts

| | Accession Months | | | | | | | | | | | |
	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
OCT FY1	0	0	0	0	0	0	0	0	0	0	0.385	0
NOV FY1	0	0	0	0	0	0	0	0	0	0.079	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0.384	0	0
JAN FY1	0	0	0	0	0	0	0	0	0	0	0	0
FEB FY1	0	0	0	0	0	0	0	0	0	0	0	0
MAR FY1	0	0	0	0	0	0	0	0	0	0	0	0
APR FY1	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY1	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY1	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY1	0	0	0	0	0	0	0	0	0	0	0	0

FY1996 NCO: 1.2
Objective Function. 5143.066

HS Contracts — Accession Months

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY1	0	0	0	0	0	0	0	0	0	0	0	0
NOV FY1	0.303	0	0	0	0	0	0	0	0	0	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0	0	0
JAN FY1	0.385	0	0	0	0	0	0	0	0	0	0	0
FEB FY1	0	0.307	0.075	0	0	0	0	0	0	0	0	0
MAR FY1	0	0.385	0	0	0	0	0	0	0	0	0	0
APR FY1	0.02	0	0.362	0	0	0	0	0	0	0	0	0
MAY FY1	0	0.117	0	0	0	0	0.265	0	0	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0.394	0	0	0
JUL FY1	0	0	0	0	0	0	0	0	0.066	0.329	0	0
AUG FY1	0	0	0	0	0	0	0	0	0	0	0.383	0
SEP FY1	0	0	0	0	0	0	0	0	0.394	0	0	0

HS Contracts — Accession Months

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY2	0	0	0	0	0	0	0	0	0	0	0.381	0
NOV FY2	0	0	0	0	0	0	0	0	0	0.192	0.19	0
DEC FY2	0	0	0	0	0	0	0	0	0	0.384	0	0
JAN FY2	0	0	0	0	0	0	0	0	0	0	0.089	0.296
FEB FY2	0	0	0	0	0	0	0	0	0	0	0	0.382
MAR FY2	0	0	0	0	0	0	0	0	0	0	0	0
APR FY2	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY2	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY2	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY2	0	0	0	0	0	0	0	0	0	0	0	0

WF Contracts — Accession Months

	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
OCT FY1	0	0.03	0.157	0	0.17	0	0	0	0.028	0	0	0.085
NOV FY1	0	0	0	0.279	0	0	0.187	0	0	0	0	0
DEC FY1	0	0	0	0	0.191	0.279	0	0	0	0	0	0
JAN FY1	0	0	0	0	0	0.361	0.109	0	0	0	0	0
FEB FY1	0	0	0	0	0	0	0.375	0	0	0	0	0
MAR FY1	0	0	0	0	0	0	0	0.471	0	0	0	0
APR FY1	0	0	0	0	0	0	0	0.186	0	0	0	0
MAY FY1	0	0	0	0	0	0	0	0	0.44	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0	0	0	0.482
JUL FY1	0	0	0	0	0	0	0	0	0	0	0.354	0
AUG FY1	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY1	0	0	0	0	0	0	0	0	0	0	0	0

WF Contracts — Accession Months

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY1	0	0	0	0	0	0	0	0	0	0	0	0
NOV FY1	0	0	0	0	0	0	0	0	0	0	0	0
DEC FY1	0	0	0	0	0	0	0	0	0	0	0	0
JAN FY1	0	0	0	0	0	0	0	0	0	0	0	0
FEB FY1	0	0	0	0	0.092	0	0	0	0	0	0	0
MAR FY1	0	0	0	0	0	0	0	0	0	0	0	0
APR FY1	0	0	0	0	0	0	0.28	0	0	0	0	0
MAY FY1	0	0	0.027	0	0	0	0	0	0	0	0	0
JUN FY1	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY1	0	0	0	0	0	0	0	0.129	0	0	0	0
AUG FY1	0	0	0	0.468	0	0	0	0	0	0	0	0
SEP FY1	0	0	0	0	0.481	0	0	0	0	0	0	0

WF Contracts — Accession Months

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
OCT FY2	0	0	0.263	0	0	0	0	0	0	0	0	0.202
NOV FY2	0	0	0.081	0.173	0	0	0	0.213	0	0	0	0
DEC FY2	0	0	0	0	0	0.47	0	0	0	0	0	0
JAN FY2	0	0	0	0	0	0.292	0.178	0	0	0	0	0
FEB FY2	0	0	0	0	0	0	0	0.466	0	0	0	0
MAR FY2	0	0	0	0	0	0	0	0	0	0	0	0
APR FY2	0	0	0	0	0	0	0	0	0	0	0	0
MAY FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUN FY2	0	0	0	0	0	0	0	0	0	0	0	0
JUL FY2	0	0	0	0	0	0	0	0	0	0	0	0
AUG FY2	0	0	0	0	0	0	0	0	0	0	0	0
SEP FY2	0	0	0	0	0	0	0	0	0	0	0	0

Scenario #5: 120 % of FY1996 NCO (continued)

FY1996 NCO: 1.2
Objective Function: 5143.066

Direct Shippers

	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
	0.077	0.076	0.073	0.072	0.076	0.072	0.076	0.075	0.062	0.061	0.061	0.063
	0.067	0.076	0.073	0.072	0.076	0.072	0.076	0.075	0.062	0.061	0.061	0.063

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
	0.077	0.076	0.073	0.072	0.076	0.072	0.076	0.075	0.062	0.061	0.061	0.063
	0.077	0.076	0.073	0.072	0.076	0.072	0.076	0.075	0.062	0.061	0.061	0.063

Accession Deficit

	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
	0	0	0	0	0	0	0	0	0	0	0	0

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2	Total Deficit
	0	0	0	0	0	0	0	0	0	0	0	0	0

Expected Number of Accessions

	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
	259.287	260.556	265.264	294.339	266.503	293.653	273.993	291.337	315.294	325.421	323.747	283.035

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
	258.522	261.522	284.443	290.539	262.946	292.994	273.604	294.756	319.481	326.71	329.61	291.425

Standard Deviation

	OCT FY1	NOV FY1	DEC FY1	JAN FY1	FEB FY1	MAR FY1	APR FY1	MAY FY1	JUN FY1	JUL FY1	AUG FY1	SEP FY1
	5.646	6.417	5.632	5.069	5.169	4.652	4.251	3.244	5.042	5.727	4.709	1.237

	OCT FY2	NOV FY2	DEC FY2	JAN FY2	FEB FY2	MAR FY2	APR FY2	MAY FY2	JUN FY2	JUL FY2	AUG FY2	SEP FY2
	5.161	7.004	5.133	2.759	3.006	4.252	4.015	5.324	7.567	6.511	6.273	6.336

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